DOMESTIC ENGINEERING

A Weekly Record of Progress in Plumbing, Heating, Ventilation and all Matters Pertaining to Domestic Sanitation

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That "an ounce of prevention is worth a pound of cure" has long been quoted parrot-like. It has rarely been used as a working formula. We have had two horrible and universal examples of the cure fallacies—the Great War and the Influenza plague. Now when the cure fails so completely there is nothing left to hide our vision of the truth, and surely the world will bend its future energies on prevention.

SALES, SERVICE AND SCIENCE.

AS a fundamental proposition, every man is a salesman, selling either merchandise or services. If he does not sell goods, he sells his services to society in some form or other, and if he sells goods, he includes with each package his services that made the sale possible, and here again his services have a greater economic value to the community than the article transferred.

Of course, the craftsman knows his calling is not properly appreciated by the public, but this is largely his own fault. He has not advertised, he has not sold his public properly; as a result, he is not properly understood by the public. Of all industries of such great importance in the world, the least advertised with intended direction, and hence the worst advertised, perhaps, is the plumbing industry.

In this new era of life, in this period of readjustment, it is opportune now for the trade as a whole, through their associations, and by local units as well as by individuals, to sell its services to the world; to help the world to understand these services by campaigns of propaganda, intelligently and wisely directed, that the community may never again look upon the tradesman as of a class mean or low, ready to hold up the public by outrageous charges or take advantage of the needs of individuals. Such is due to misinformation and ignorance on the part of the public. But excusable ignorance it is, on the public's part, for it is within the scope and function of the trade to educate and properly inform the public on all matters pertaining to the industry. The public hasn't time, it is busy on other things, and your matters must be brought to its attention in a manner to procure a favorable reception.

No trade in the world could go to its customers with greater appeals and receive greater appreciation of the value of its services. As medical science gains in knowledge of disease, its causes and cures, domestic sanitation leaps up in preventative importance in the care of health and life itself, superior to the curative importance of the medical practitioner. If 6,000,000 died the past year from Influenza, the germs of which developed into fatal proportions in persons physically below par, then a greater number escaped altogether, because their living and sanitary conditions were such as to prevent the growth of the germs in more healthy bodies.

The preventative aid and the future portend a time when only sanitary homes, towns and cities, and countrysides will prevent the development of these plagues and scourges of hell, by allowing no filth and dirt, in which the germs may develop, and should such develop, it may be surrounded, limited and localized. Such are the conditions that science now understands, and which mean so much to the life and vitality of the plumbing trade. Such offers a leverage for the trade to place itself in the highest and most honored of the vocations of life, as its first interests are the health and comfort of the individual, the family and the preservation of life itself. It attacks disease and death from the preventative side, which is by far the most important side, as medical science is beginning to recognize, and as the recent world-wide plague of influenza is teaching in a horrible lesson. The old adage, that an ounce of prevention is worth a pound of cure, was never better illustrated than in these recent happenings, and with medical science's frankness in stating their inability to cure in these cases, it falls heavily upon the shoulders of the plumbing, heating and ventilating trades as a paramount duty on their part to bend every energy to see that the world is cleaned up, given a universal shower or bath-tub, and all other necessary things, and to see that it is kept cleaned up. For the new order of things is going to lay stress upon the ounce of prevention and the sanitary engineers are going to be called upon to furnish that ounce. They should in justice to themselves start the ball rolling, should campaign with suitable propaganda, so that their services and their position will be properly recognized in the future New World.

FACTORY HEATING

Simple and Efficient Direct Heating Systems for Small Factory Buildings

By Alfred G. King

THE use of electric power for manufacturing is becoming more general with each succeeding year, and there are hundreds of industrial plants now using motor-driven machinery which formerly depended upon steam for power. In a majority of these plants the steam for heating was obtained from the boiler used for power.

This change in the method of operating the machinery has provided a large amount of work for the heating contractor, as with the change from steam to electric power each factory has generally required the installation of a new heating apparatus or a remodeling of the system formerly used.

We may well assume that, as more or larger electric power plants are constructed, there will be an increase in the number of factories using electricity and consequently additional work for the heating contractor or fitter, who keeps informed as to the various phases of factory heating and who is able to intelligently discuss the same with the factory owner. There is factory heating work to be had at the present time in almost every community as a canvass of the factories in any town, city or district, will show that the heating apparatus in many of them should be remodeled to make them efficient.

In a recent article we discussed the installation of a modified steam heating system in a new and modern factory building of concrete construction. When a factory is new, or when it is being newly constructed, proper arrangements for the installation of the heating apparatus can be made. When an old building is to be heated the structural conditions obtaining cannot well be changed, and therefore the installation of the heating apparatus should not be attempted until all conditions affecting the work have been carefully noted and studied.

There are many small knitting and hosiery mills, shoe factories, etc., which are housed in single detached buildings, rectangular or L-shaped, and from one to five stories in height. For buildings of this type there are several good methods of direct heating. A gravity steam system is probably more generally used than any other with perhaps some special valves or special appliances to increase efficiency. As these plants are so small that a night watchman or fireman is seldom employed, and therefore no person at hand to attend the heating apparatus at night, it is required that the capacity of the system—size of boiler, square feet of radiation, etc.—should be sufficient to maintain a reasonable amount of heat for a ten or twelve-hour period. The fireman should be able to heat the building to a satisfactory temperature in from one and one-half to two hours from the time he arrives in the morning, which we may assume is anywhere from

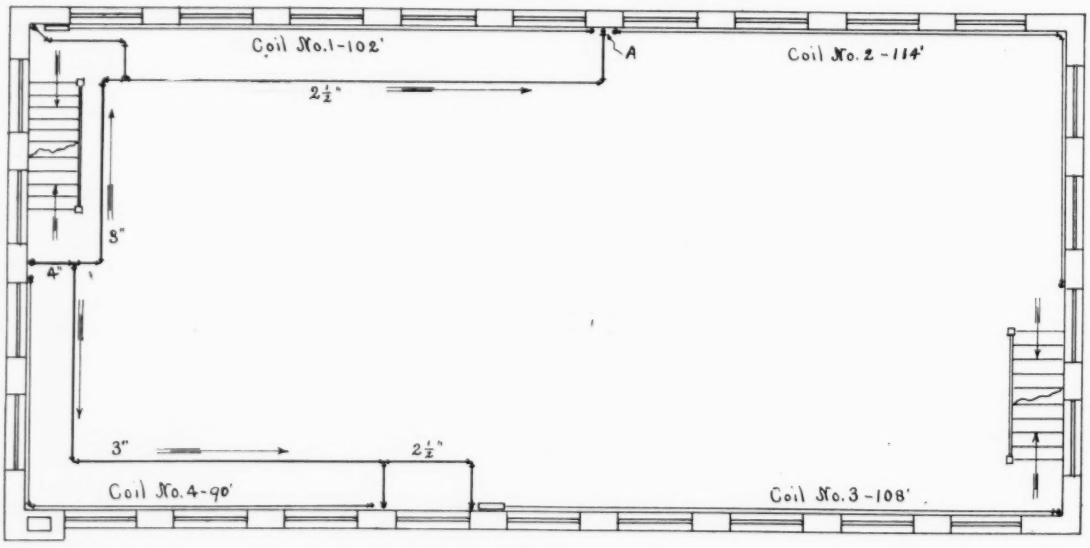


Fig. 1.

five-thirty to six o'clock, or about two hours before the employes report for work.

It is not economical to allow any building to become thoroughly chilled at night, and particularly so a factory in which the work is such that the operatives labor to the best advantage in a scantily clothed condition. In such factories the temperature must be brought to a normal condition before the day's work commences, or much time and efficiency is lost.

This fact should be made clear to the factory owner. It is frequently a hard matter to convince him that it is to his interest to keep the building from chilling at night. He is apt to look upon the cost of a night fireman and extra fuel consumed as money thrown away, and yet the added efficiency of but very few of his employes during the first hour or two in the morning might more than make up the extra expense incurred. When the heating is continued during the day and but partially during the night, or so that the temperature does not lower more than ten or fifteen degrees during the night, it is possible to quickly raise it to the proper degree in the morning with but little labor and fuel. On the contrary, if the building is allowed to become thoroughly chilled at night it is necessary to install from 25 to 30 per cent more radiation and a larger boiler to overcome this condition, with a corresponding increase in fuel requirements. Cold walls and floors, machinery, etc., fairly eat up the heat units from the first steam supplied in the morning, requiring harder firing of the boiler and resulting quite often in uncomfortable temperature in the factory during the early hours of the morning.

The average small factory building offers an admirable opportunity for the installation of a simple effective heating system. To conserve labor and material, and consequent cost, the heating apparatus should be as simple and direct as is possible to make it. Before designing the piping system all local conditions, which might affect the installation, should be carefully investigated and studied and the work planned in such a manner that all piping, so far as possible, is available as radiating surface. Perhaps no heat of any account is desired in the basement. If so, an overhead system can no doubt be installed to good advantage. The main supply pipe can be taken as directly as possible to the ceiling of the upper floor, where lateral mains are run, and the radiators or coils on the various floors are then supplied by drop risers extending downward through the building. It may be found on investigation that it is not possible to run the mains on the ceiling of the top floor. The design of the ceiling, insufficient height, shape of the roof, or some other condition, may interfere with this plan. If so, the mains may be run on the ceiling of the floor below, and in this event the radiators or coils on the upper floor are fed by up-risers and those on the floors below by down-risers.

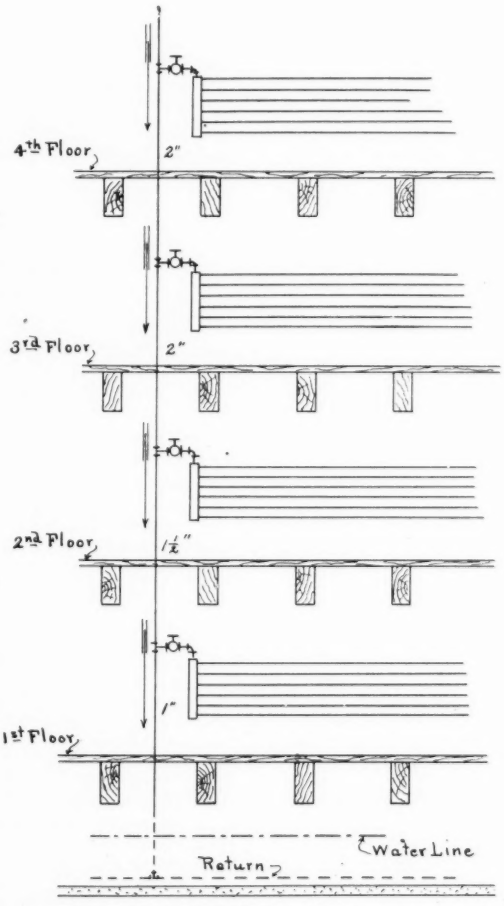


Fig. 2.

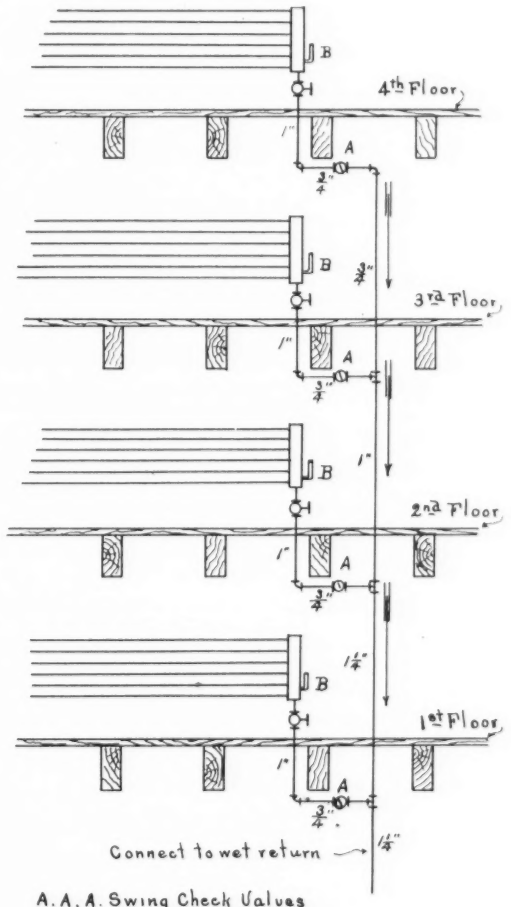


Fig. 3.

In the construction of many factory buildings the under side of the roof forms the ceiling of the top floor, and therefore it is best to run the mains on this floor as they will, in a measure, take care of the roof exposure.

To show some details of the installation of a system of this character we illustrate several parts of a small factory heating apparatus. Fig. 1 shows the top floor of a small knitting mill. The building is 26 by 56 feet in size, inside measurement, four stories high, and has a ceiling height of 10 feet for each floor. All upper floors are similar so far as concerns the location and number of windows, the location of stairways, etc., and therefore the distribution of the radiating surface on the intermediate floors is the same as shown in Fig. 1. The glass exposure for each floor consists of twenty-six windows, each 4 by 6 feet, making a total of 624 square feet of glass. The net exposed wall surface for each floor is 1,616 square feet, and the cubic contents 14,569 feet.

By the usual methods of estimating it is found that 465 square feet of radiation will be required on each floor to maintain a temperature of 10 degrees in zero weather The first floor differs somewhat from the upper floors. The offices, shipping room, etc., are located on the first floor and therefore the exposure is greater. The radiation required totals 550 square feet.

Note, by reference to Fig. 1, how simple a piping system is planned. The amount of pipe for the installation is about as small as it is possible to use for the work. The heating surface on each floor is divided into four pipe coils, two of which are miter coils and two are corner or branch coils.

A 4-inch supply riser is brought up from the boiler room in the basement and extends to a point just below the ceiling of the top floor. The high point of the system is at the top of this riser and from this point all drainage is downward to the boiler. The pitch of the mains downward is indicated by arrows. All branches from the main are taken from the bottom with what is commonly known as the D connection (45 degrees out of the bottom), and the division of the 4-inch main into two 3-inch branches is made in the same manner; therefore eccentric fittings are not required as drainage is provided at each connection.

The method of connecting the coils from the drop risers is shown by Fig. 2. This sketch illustrates the drop riser which supplies the No. 2 coils on each floor, and is indicated by A in Fig. 1. On the first floor a coil occupies the same position as the No. 2 coils on the floor above, and it is therefore supplied from the same drop riser which serves them. It is required that each drop riser shall be bled or dripped at the bottom to care for the condensation collecting in it, and this drip is connected to the return. The returns on this installation are wet, or below the water line, and the method of connecting the drip is indicated in Fig. 2.

The return end of each No. 2 coil is connected into a single return riser and check valves are used in each return connection, as indicated in Fig. 3. In the event of a dry return being used in the basement, the drip connection shown at the base of the riser in Fig. 2 must be checked the same as a return from a coil as shown in Fig. 3.

It will be observed that the mains on the ceiling of the top floor, and also the branches, are somewhat larger than would seem to be necessary. The object sought in employing such large sizes of pipe for this service is to circulate the steam at a very low pressure with a minimum amount of friction. As planned it is possible to fill the entire system with steam at a pressure but slightly above that of the atmosphere. All friction restricts the flow of steam, and with the overhead method of piping all condensation flows with the steam, therefore, with the use of this system and piping of good size the element of friction is hardly to be considered.

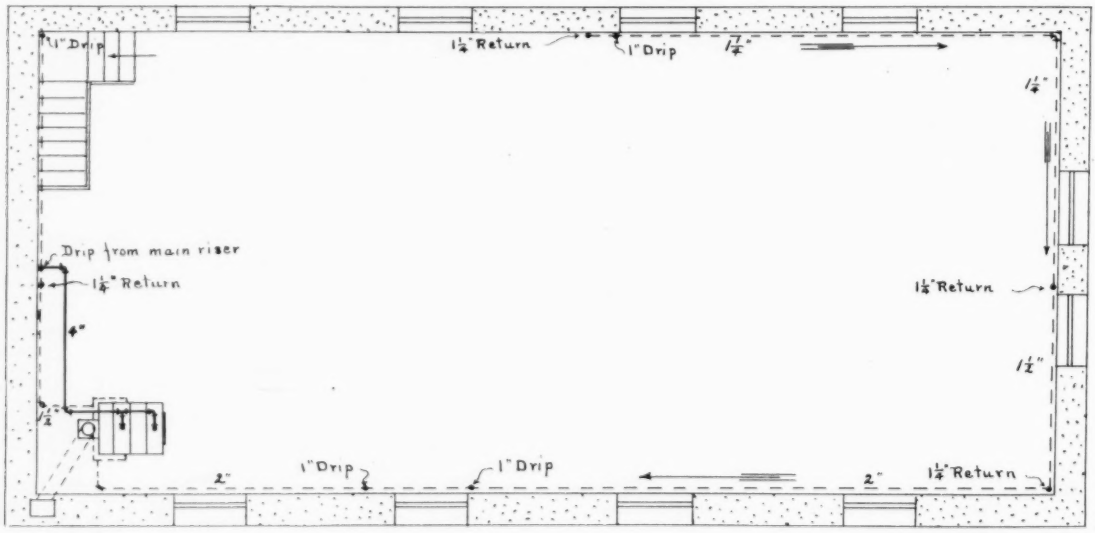


Fig. 4.

The returns in the basement follow the line of the walls to the corner, in which the boiler is located. Fig. 4 shows a basement plan of the building, and the returns being wet or below the water line, they are indicated by dotted lines in the illustration. Attention is again directed to the small amount of piping used.

The question of installing pipe coils or wall radiators, aside from any personal preference of the owner, should be determined by considering the space available for their location. If there is sufficient space under windows, unbroken by doors, pilasters or other obstructions, pipe coils can be used to good advantage. If the building is of such size that it is necessary to strengthen the walls by constructing pilasters, which extend into the room,

wall radiators can doubtless be used to better advantage than pipe coils, as a number of radiator sections in the form of a panel can be located below windows and between pilasters. These will not extend into the room much, if any, further than the face of the pilasters. This

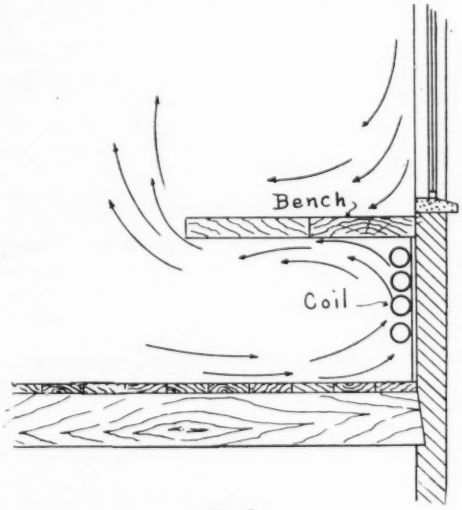


Fig. 5.

method will conserve floor space which is valuable in all factories.

In the case of the building illustrated, the height of ceiling is uniformly 10 feet, the windows are 4 feet wide and 6 feet high, and are set in the walls so that there is 1 foot between the top of the window and the ceiling. This allows a wall space of 3 feet below windows which is ample for the installation of either pipe coils or radiators as may be desired.

If branches are used along outer walls, they should

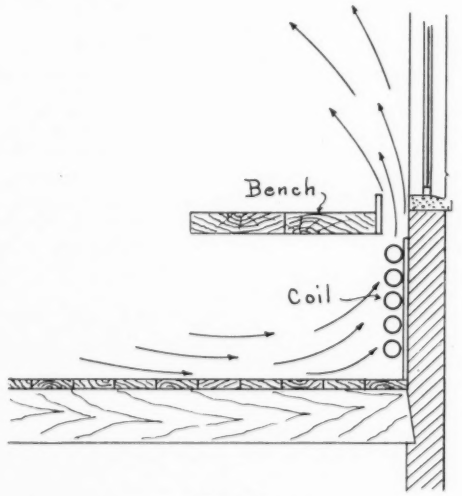


Fig. 6.

set out from the wall at least 6 inches in order to give the heated air an opportunity to circulate properly. We have at various times called attention to this detail and in a recent article made brief mention of it. It is so important a matter that we again refer to it. If the bench is set against the wall the air heated by the coil does not properly counteract the window exposure as it is prevented by the bench from reaching the window. It is turned by the bench directly into the face of the workers, as shown by arrows in Fig. 5. If the bench is set out from the walls, as it should be, the circulation of the heated air will be directed as indicated by Fig. 6, and

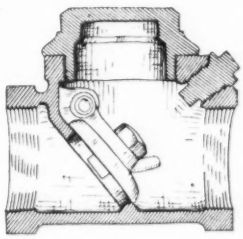


Fig. 7.

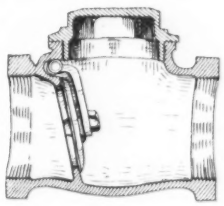


Fig. 8.

the rotation or turning movement of it in the room will in no wise be affected by the bench. The window exposure will be cared for and the air circulated without discomfort to the workers, sitting or standing at the bench.

As a detail, essential to the successful operation of a system on which check valves are used as shown by Fig. 3, we call attention to the importance of selecting the right kind of a valve for the work. The common type of horizontal swing check valve is shown by Fig. 7. The clapper of this valve is heavy and hangs at a considerable angle. A valve of this character, when used, as mentioned, will require too great a weight of water to open it. To obtain the height of water necessary to produce this weight there is danger of flooding the return end of the coil or radiator. Fig. 8 illustrates the type of check valve that should be used. A clapper, very light weight in construction, hangs in an almost vertical position and a very little pressure or weight of the water will open it. The valve illustrated by Fig. 7 is intended for work where considerable pressure is carried and is therefore strongly built. There is practically no pressure on the piping where these valves are used as illustrated, and therefore, a heavy and strong valve is not required.

Many good pipe fitters, careless regarding small details, frequently get into trouble owing to failure to observe such little details as we have noted, and many otherwise good jobs of heating have been condemned owing to failure in operation, due to some insignificant error in the method of installation.

Sour Grapes.

Edith: "Jack told me I was so interesting and so beautiful."

Marie: "And yet you will trust yourself for life with a man who begins deceiving you even during his courtship."—"Toronto Telegram."

The Skipper.

The boat drifted out on the sunlit sea. The man and the maiden were silent and a little sad. His leave was ended; the time for parting had come.

"Dearest," he breathed softly, "will you float with me always—down the stream of life?"

"The same as now?" she whispered.

"The same as now," said he.

"I will, gladly," she cried.

He was rowing, doing all the hard work; she had the helm—she steered.—"Tit-Bits."

Buy United States War Savings Stamps.

SOMETHING ABOUT AIR CHAMBERS *in* PLUMBING SYSTEMS

Self-Replenishing Air Chambers in Plumbing
Air Chambers Should Be Large and Roomy

By Robert J. Gordon

(Continued from Page 218 in the February 1st Issue.)

IN "Domestic Engineering," on page 124 of the January 18th issue, appeared Chapter I of "Air Chambers in Plumbing Systems." It related to common air chambers, the elasticity of air, its adaptability to the cushioning of water shocks, etc. These, however, were that class of air chambers which lose their air by absorption in the water. The air has to be replenished periodically.

In the February 1st issue, page 216, appeared Chapter II. This related to self-replenishing air chambers. The

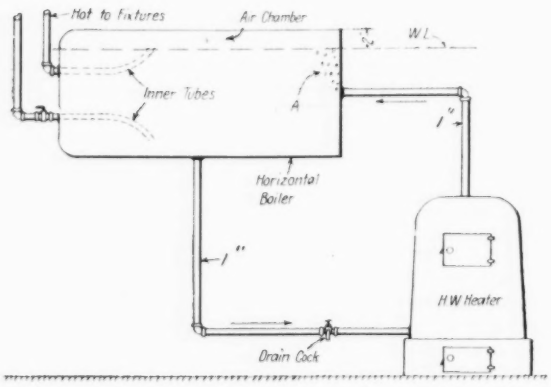


Fig. 1.

means for self-replenishment were clearly explained, and some examples of the practical application of the underlying principle were illustrated. These referred principally to the formation of air chambers over and inside of the ordinary types of standard upright range boilers.

Now we have reached the last chapter on this important subject. In it we propose to show how the same self-replenishing principles may be applied to horizontal boilers, such as those frequently used in connection with tank heaters; also, we may add, their application to risers —and long horizontal branches on the hot water supply piping.

Suppose we assume a case where a building is supplied by a street main, located 200 feet from building. The pressure in main is 60 pounds. The service line is 1¼-inch galvanized iron. It runs straight into building, full 1¼ inch, till it reaches the branch, which feeds a tank and tank heater in basement, which is the source of hot water supply to the building. Then it reduces to two 1-inch lines. One supplies the tank, the other supplies all cold faucets in building. The length of service pipe inside building, before it reaches the hot water tank is 50 feet. That makes the line which supplies hot water tank from street main exactly 250 feet long.

From top of tank is a 1-inch hot water flow pipe, which feeds all hot water faucets in building. There is a bath on first floor, say 100 feet from hot water tank, measured along the hot water line which supplies it.

From street main to that bath is, therefore, 350 feet. That is to say, the water leaving main must flow through 350 feet of pipe before it reaches the bath.

If there is no air chamber on such a job, it is quite clear that there must be a disagreeable water hammer in the system, when that bath cock is closed. If the cock is of the "Fuller," or other quick-closing type, the hammer will be magnified, because of the rapidity with which such cocks are usually closed.

If it is of the compression type, particularly the slow closing kind, the water hammer will not be so pronounced.

The sound of water hammer in a building is not only disagreeable and disquieting to the occupants, but it is a sure indication that the plumber has not done his work right. He has done something he should not have done, or he has left undone something which he should have done. It does not matter which it may be, for the result is the same. It is that which annoys the occupant, and lowers his opinion of the plumbing system and the contractor who installed it.

But in addition to the disagreeable and sometimes alarming noises produced by water hammer in a building, there is another reason why it must be avoided. It strains the system beyond the limit, which it is intended to stand, and frequently causes leakage. The force of the blow cannot well be determined. It may be anywhere from two to eight or ten times the original pressure, depending greatly on the velocity of the flow, the elasticity of the piping, tank, etc., the speed of closing of the faucet, and presence of small pockets of confined air in heater, tank or system.

In the case referred to, we would expect that the force of the blow would be at least three times the normal pressure, if there is no air chamber anywhere on the system.

That means that an instantaneous pressure equal to 180 pounds per square inch or more may exert itself

throughout the system. The tank heater is made of cast iron. If it cannot resist such a shock, it will crack and leak. Or, the seams of the tank may be sprung at the weakest spot, causing leakage. There is no danger of an explosion, or indeed, of a very large leak. The leakage will probably be small. But it should not occur and will not occur, if the water is cushioned in a satisfactory manner.

There is not much use of installing a small air chamber, even of the self-replenishing type. It will help reduce the force of the blow, but the liability is that the blow will still be too severe.

A large volume air chamber must be used not only to prevent the sound of water hammer, but also to prevent the accumulation of excess pressure. Furthermore, as previously stated, the air chambers should be self-replenishing to prevent recurrence of the hammer. How that may be done by the use of an ordinary upright tank hung horizontally, is shown in Fig. 1. The cold water is introduced into boiler by a ¾-inch copper inner tube bent down. The tank heater takes its supply from bottom of tank, and delivers into end of tank. All air bubbles which are liberated by the water in heater gravitate up to top of tank as shown at A.

Hot water is drawn out of tank by the inner tube shown turned up. Then it flows direct to fixtures.

In this particular case, however, the mouth of upper inner tube terminates, say, two or three inches below top of tank. That means that top of tank to that depth is really an air chamber. Suppose the tank is 5 feet long, or 60 inches. Suppose the sectional area of air space above the water is 20 square inches. Then the volume of air enclosed in this air chamber is 1,200 cu. inches. This equals nearly three-fourths of a cubic foot.

It is equal to an air chamber made of 1-inch pipe and about 1,500 inches, or say 125 feet long. It is equal to a 2-inch pipe air chamber about 31 feet long, or a 4-inch pipe air chamber about 8 feet long. That is a good-sized air chamber, and is something worth while.

Incidentally, if the tank is 200-gallon capacity, the loss of water storage space is only about six gallons less, or three per cent of the total capacity of the tank. The 200-gallon tank will be reduced in capacity to 194 gallons—which would hardly be noticeable. It does appear, therefore, that the tank enclosed air chamber in Fig. 1 is an excellent thing for the condition we have assumed in this article. All of the momentum of the water rushing into the building from street main to tank some 250 feet in length, should be easily taken up by this chamber without materially increasing the pressure in the tank or heater, when a faucet is suddenly closed anywhere. Furthermore, it would appear that this air chamber will not lose its air, but will be replenished slowly by air globules rising from heater.

Of course, that air chamber takes up the momentum of the flowing water only from main to tank. But the extension of the line from tank to faucet is another thing. Suppose it happens to be 100 feet long, as previously assumed. Then we have that additional body of water to bring to rest with a cushion. If this long line is not cushioned, it will hammer even though the tank may be perfectly cushioned, as in Fig. 1. So you see the job is only half-cushioned by the tank. The other half must be cushioned at the ends of the lines, or some other convenient spots. Logically the correct position for these air chambers is close up to the fixtures themselves. The idea is to cushion the whole length of each flowing column of water.

A cushion in the middle of a line does not cushion the whole line. It may help the whole line, but it only effectively cushions that part of the line between the cushion and the source of supply, or the last cushion between it and the source of supply. We think that is quite clear.

Suppose there is a long railroad train, running at high speed with the engine pushing at the rear; the cars are uncoupled about the middle of the train. The engine shuts off steam and brakes are put on the car coupled to engine. They come to a standstill quickly, but the front part of train goes ahead. That is due to the momentum of these cars. The same applies to a water pipe system. That part behind the air cushion is cushioned, but that part beyond it will tend to go forward by its own momentum. If it is not cushioned at the head of the column, it may pound and cause water hammer there. That water

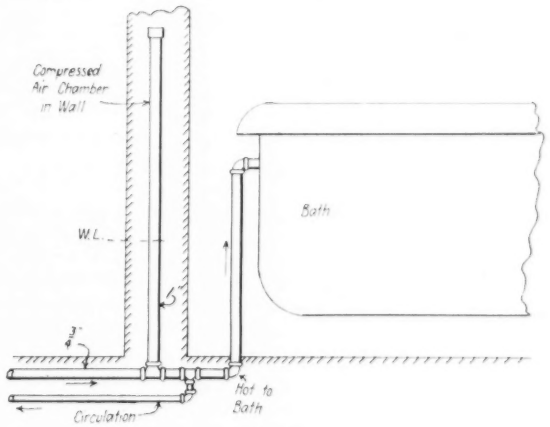


Fig. 2.

hammer, however, cannot create a force which will operate to injure the tank and heater behind it. Its force will be spent on the piping of its own line and any line branching off from it. So you see the common practice among plumbers of placing an air chamber at the end of each long line is really a good one, providing the air chamber does not lose its air.

Suppose there is a bath on first floor, fed by a long line from hot water tank, and a circulating pipe is brought back to tank from bath. Then we suggest the air chamber be applied something like Fig. 2. That is to say, the air chamber is taken off top of hot water flow line, not from its side. This allows globules of air from tank to gravitate up into this air chamber and replenish it. Furthermore, this air chamber should be generous in volume. A chamber made of ¾-inch pipe a foot or so long is not enough. It should be made of larger pipe, 1-inch or larger, and should be several feet long, to be effective. Then a good cushion will be secured, which will effectively prevent water hammer, and the creation of excessive pressure or shock.

In a similar manner, we should carry out the same principle at the top of all rising lines. That is where the air is most likely to be retained, because the hydraulic pressure is lower than it is in basement of building.

Fig. 3 shows how an air chamber may be applied on top of a riser line. The circulation pipe is taken from riser below the branch which feeds the fixture. An important point to be taken care of here is to see that the fixture branch is not taken off the riser in such a way as to collect the air bubbles, or divert them from the air chamber. The air bubbles, which from time to time may manage to gravitate up the riser, must have freedom to collect in the air chamber, and not get into the fixture

branch. Here also the air chamber must be large. In fact, it is well to impress upon plumbers the truth that too small air chambers should not be installed. They must be large and roomy. Then they will be successful.

Let us tell you of an instance which occurred in the writer's early practical experience in plumbing. It is perhaps the most impressive lesson he ever had, regarding the importance of large air chambers, and, coming at a time when he was quite young in the business, he never forgot it.

He happened to be sent out from the city to install

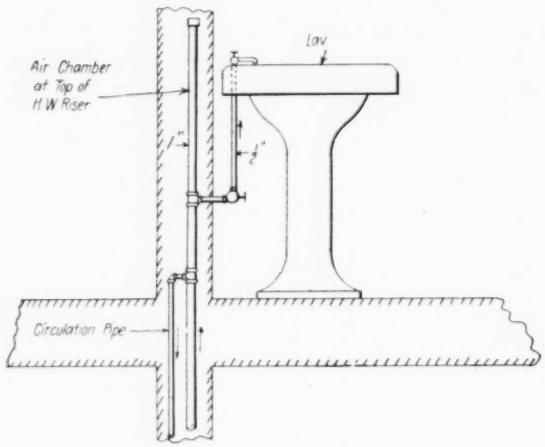


Fig. 3.

plumbing in a fine house in a village where many city business men dwelt. While there he was asked to go out to a neighboring estate and see if he could fix a windmill pump, that got out of order every week or two.

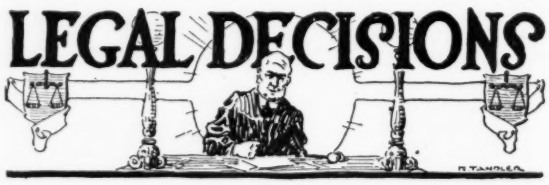
The well was brick, 3 feet in diameter and about 100 feet deep. The plunger was down below the water. The delivery pipe was 2-inch and the plunger rod was inside the delivery pipe. When he arrived he found the mill working, but the pump was not lifting water. The whole thing in the well, including the lowest joint of pipe on the delivery line, was disconnected and hoisted to the surface. New washers were put on everywhere. The plunger valve was examined and found O. K. Then the parts were put together above ground, stood up on end, and filled with water to test them out. They were tight. It was then discovered that the pump was single-action. It lifted water only on the up stroke and none on the down stroke. Of course that means intermittent discharge, which, when mill is running fast, means an excessive strain on it. It also means that the plunger washer was liable to be injured and perhaps folded back and made leaky. Besides, a quick action of mill was liable to strain and stretch the rod, or pull it apart.

He, therefore, procured a full length of 2-inch pipe, capped one end, melted a stick of sealing wax into it to be sure that cap would be perfectly air-tight, placed a 2-inch tee where the first coupling came on the delivery line, and connected the big air chamber to it. This air chamber remedied that mill. Later reports were to the effect that it ran over a year before trouble was again experienced.

The local plumbers for miles around all had a hand "tinkering" with that pump. They all put on new washers, but none seemed to think of putting on an air chamber. The result was that their repair work, no matter how well done, could not withstand the awful pounding strain set up by the pump, because it had no air chamber. That lesson was never forgotten by the writer. It demonstrated to him the value of a large air chamber.

Now we think we have covered the subject of air chambers fairly well. We have not discussed any formulas for finding the force of a blow from water hammer in a system. That would only be confusing to the reader. We have, however, mentioned the main facts in the case. It is up to the reader to utilize these facts in a practical way, and use air chambers, where, when and how such accessories should be used. And we not only advise the use of large air chambers, but particularly advise that the self-replenishing locations be selected wherever possible.

Finis.



Requirements of Partners.

The Court of Appeals of Kentucky says, in the case of Chambers vs. Johnston, 201 Southwestern Reporter, 488, that the law governing the rights of partners with relation to each other is well settled.

A partner is an agent of his co-partners in all partnership transactions, and hence cannot get for himself that which it is his duty to secure for the partnership.

If he uses the partnership funds in effecting a private enterprise of his own, he may be required to account to his partners for the profits.

If he secures a contract for himself, which it was his duty to secure for the partnership, or purchases property which he should have purchased for the partnership, or engages for himself, without the consent of his co-partners, in a business which is similar to the business of the partnership, so as to be in competition with it, he may be required to account to his co-partners for the profits.

Being the agent of his co-partners relative to partnership matters, he must act in perfect good faith toward them, with reference to such matters.

But the court should not be understood as holding that a partner must account to his co-partners for the profits of a venture outside the partnership and not of the character of business done by the partnership, although the partnership contract may require each partner, as in the instant case, to devote his entire time and attention and apply his utmost skill and ability to the partnership affairs. Where such obligation is upon a partner and he devotes his time and ability to a business in which he invests his own funds only, and which is other than the character of the partnership business, his partners cannot require an accounting of the profits, but their remedy is of another character.

Production of Cadmium.

A paper by Dr. C. E. Siebenthal, of the United States Geological Survey, reports that the production of cadmium in this country has steadily increased since 1910, reaching 207,000 pounds in 1917. In the first 8 months of 1918 there was produced 108,700 pounds of the metallic cadmium and 36,000 pounds cadmium sulphide. The plants producing metallic cadmium have increased in number. The metal is principally derived from zinc ore, in which it occurs in minute quantities. Aside from the United States, Germany is the only producer.

QUESTIONS & ANSWERS

WANTS INFORMATION ABOUT VACUUM HEATING.

Editor "Domestic Engineering":—Will you kindly advise a subscriber on the following points:

The owner of a medium-sized residence wishes a vacuum heating system installed, using an automatic electric pump. Which is the more preferable and why?

1. A one-pipe steam job with an air line and an air line automatic electric vacuum pump, or

2. A two-pipe steam job with thermostatic traps on the returns of the radiators and an automatic electric return line pump to pump the air and condensation from the radiators and return pipes and return the water to the boiler, or

3. A two-pipe steam job with thermostatic traps on the returns of the radiators and the returns dripping to a receiver where air is eliminated and condensation is returned to boiler by an automatic electric pump?

Iowa. Jake.

The question of using any of the three systems mentioned is largely one of personal preference and of meeting whatever conditions surround the installation of the work.

The most economical system to use or operate is one, in which all condensation flows by gravity to the boiler or to a central point, from which it can be returned to the boiler. On an ordinary residence heating job, it is not necessary to pump the condensation, unless it is required that some of the radiation shall be placed below the water line of the boiler. The pumping of condensation is an added expense of maintenance.

We assume that fractional or graduated supply valves are to be used, and that the radiation will be of the hot water type; and that a thermostatic trap will be used on the return end of each unit.

If this assumption is correct, we prefer the system specified as No. 3 in the above communication.

The probable cost of installation, as well as the operating expense, are no doubt factors to be considered in making a decision, otherwise any system, in which the air is automatically removed, and which is closed to the pressure of the atmosphere, will no doubt give full and complete satisfaction to the owner.

A residence heating system should have the following advantages:

1. Perfect control of circulation, with power to vary it at will.

2. Power to independently modulate the temperature in any part of the heating surface.

3. Continuous automatic drainage of condensation and removal of air.

4. Ability to utilize the heat of steam at low temperatures, or at or below the pressure of the atmosphere.

5. Convenience, quietness, and economy of operation—the latter meaning not only the cost of fuel but also the expense of operating an electric pump or other appliance.

Correspondent can check these advantages against the three systems designated, and determine which one most completely covers the requirements.

PRACTICAL SUGGESTION FOR STRENGTHENING SCREW CAPS ON CLEAN-OUTS.

Editor "Domestic Engineering":—I have a suggestion to make to manufacturers of brass sewer clean-outs, and will appreciate the criticism of the trade.

We open a great many 4-inch and 2-inch iron body clean-outs with brass screw caps. About half of these have to be cut out. The square nut in the middle is not heavy enough to hold the wrench, as they are now made. I suggest making the brass plate and screw with 2 lugs, located over the 4-inch thread. Then we would use a bar instead of wrench.

Fig. 1 shows the present form of brass screw cap. A plan view of top is shown at A, and section through it is

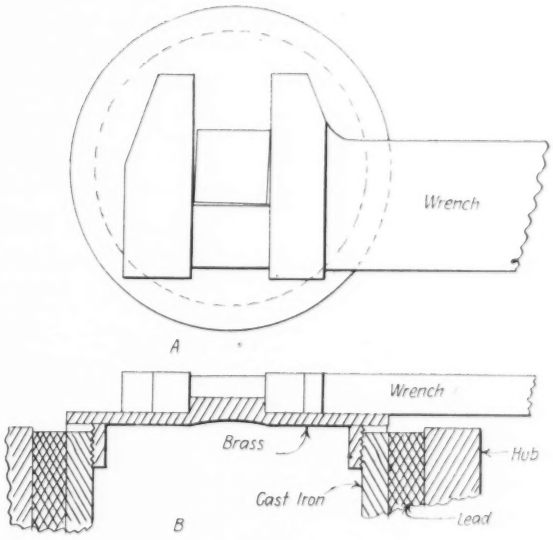


Fig. 1.

shown at B. A wrench is shown in the act of unscrewing the cap. It does not get a proper hold of nut. Consequently it generally damages the nut, sometimes rounding it off so that wrench will ultimately not get a hold. Then, of course, the cap has to be started with hammer and chisel, which damages the cap. That is not good engineering.

Fig. 2 shows my suggestion for improvement. Two studs, 1 and 2, are cast on top of cap, directly over the thread. The top of cap at this point is strong and unyielding because of the reinforcement of the threaded part under it. These studs may project just enough to hold a square-edged iron bar between them for un-

screwing the cap, as in Fig. 3. The legs should be at least ¾-inch by ¾-inch square.

The unscrewing bar may be as long and as strong as is required. It would appear that this is a practical im-

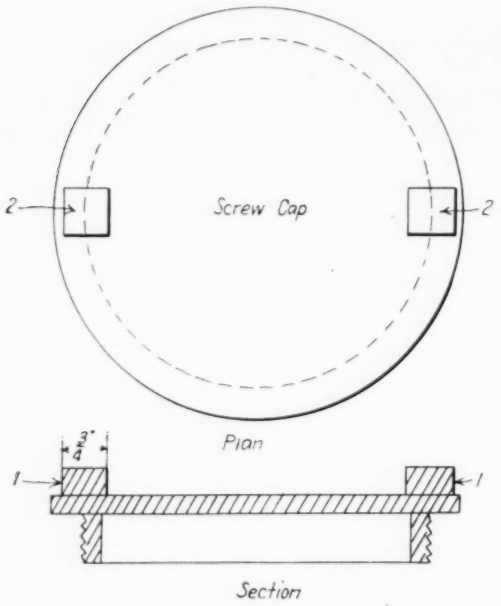


Fig. 2.

provement, which will eliminate the trouble that plumbers have had in the past by screw caps, having to be

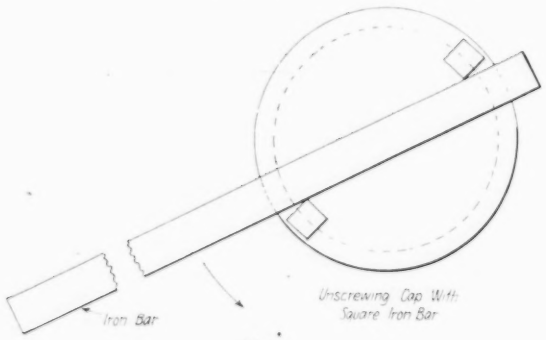


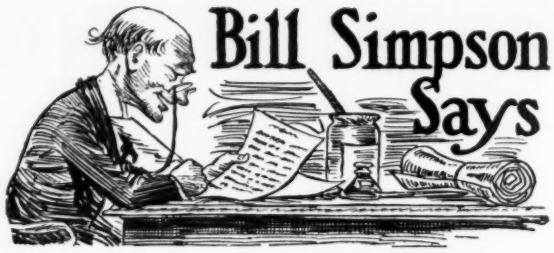
Fig. 3.

cut out and spoiled because they rust fast to the iron bodies.

Walla Walla, Wash. W. J. Bemus.

Suggestions for the benefit of our trade are always in order in "Domestic Engineering," and we invite our readers to discuss the above-described suggestions fully. Perhaps some of the manufacturers of screw cap clean-outs for house drainage work will have something to say on the subject. In any discussion or criticism in this question, it might be well to consider the possibility of applying so much force to a screw cap that the ferrule will turn in the hub. Wouldn't this be possible?—Editor.

The General Staff of the Oregon National Guard, of Portland, has authorized the construction of a one-company armory at Marshfield. The structure will cost about $40,000.



(With Apologies to K. C. B.)

In New York City,
* * *
When they find a body
* * *
Of a dead man, woman or child,
* * *
And a post mortem
* * *
Fails to reveal the
* * *
Cause of death,
* * *
They mark the certificate
* * *
G. O. K.—meaning
* * *
God Only Knows.
* * *
I guess we'll admit
* * *
That this is about right,
* * *
When applied to a lot
* * *
Of things besides deaths.
* * *
One of the things that
* * *
"G. O. K." is
* * *
"What's going to happen
* * *
In 1919? Will business
* * *
Be good or poor?"
* * *
Admitting that it is true
* * *
That "G. O. K."—
* * *
Still, it's going to be
* * *
Up to you and me
* * *
To a large extent.
* * *
Therefore, let each of us
* * *
Get out and boost
* * *
For Building and Business,
* * *
And Prosperity.
* * *
Let's not lose our heads
* * *
About unemployment or
* * *
Bolshevism or the I. W. W.
* * *
Let's Work and Boost,
* * *
And keep the boat moving
* * *
Ahead at even keel.
* * *
Don't let us upset the boat
* * *
In the rapids.

SILVER ANNIVERSARY MEETING *of the* AMERICAN SOCIETY *of* HEATING *and* VENTILATING ENGINEERS

Marks a Quarter of a Century of Great Progress—Walter S. Timmis Elected President

A QUARTER of a century of remarkable progress, of which its members may well be proud, was reflected at the twenty-fifth annual meeting of the American Society of Heating and Ventilating Engineers, held at the Engineering Societies Building, in New York City, on Tuesday, Wednesday and Thursday, January 28th, 29th and 30th.

The society's rapid strides of progress were graphically shown in a chart of the membership curve prepared by President-Elect Timmis, in which the performance of the past few years is indicated by a vertical line, and the report of Secretary Obert showed that, when applications now in hand are acted upon, the roster will contain some 200 names beyond the thousand mark which was the goal set for this year.

Equally conspicuous is the society's increasing value to its members and its growth in importance as a scientific body.

The Research Bureau, the formation of which has occupied the attention of the society for some time, is now about to become an established fact. According to the report of J. F. Lyle, chairman of the Committee on Research Bureau, $10,000 has been thus far pledged toward the fund for its maintenance, and the committee is assured of the additional $10,000 necessary.

Tuesday Afternoon.

It was this report by Mr. Lyle, which formed a feature of the opening session of the meeting on Tuesday afternoon. The report was so comprehensive and the proposed provisions for the conduct of the bureau had been so carefully worked out that the entire plan, as presented, was immediately adopted by the meeting.

Plan for Research Bureau.

The plan as adopted is as follows:

First: That there be a standing committee known as the Research Committee, consisting of fifteen members; each serving for three years, five retiring each year.

Second—Election: (a) That the council shall nominate, previous to October 1st of each year, five members to fill vacancies of those retiring at the next annual meeting.

(b) That the nominations made by the council shall be published in the October Journal of the Society.

(c) That prior to October 1st any ten members over their own signatures may nominate one or more additional members for the Research Committee, and such additional nominations shall be placed on the ballot opposite such of the nominations made by the council as designated by those making the nomination.

(d) The election shall otherwise conform to the same regulations as are provided for the election of officers.

(e) Vacancies may be filled by the council. Such persons chosen by the council to serve until a successor can be elected at the next annual election.

Third—Sub-Committees: The Research Committee may be divided into various sub-committees, as may be found desirable to properly carry on the research activities of the Society.

Fourth—Activities: The activities of the Research Committee shall include:

(a) Investigate the needs for research in any particular subject and if sufficient to warrant consideration from the standpoint of pure engineering, appoint a sub-committee to

1. Collect all existing data and records.
2. Carefully examine the records and report on actual needs for further work.
3. Report on all available laboratories of colleges or other institutions that might be utilized.
4. Make definite suggestions for line of procedure in research and to confer with and advise the Director of Research upon this particular subject.

(b) Where research work is found necessary and course of procedure is obvious, negotiate with laboratories of colleges or organizations, as offered, or order work handled by director of bureau. No work should be assigned to the bureau that can be handled equally well elsewhere.

(c) If sufficient amount of existing data appears to be available for analysis by committee, to present a synopsis of data to next regular meeting of the Society for discussion and approval.

(d) To report all exclusive data, whether originating through the Research Bureau or committee, or elsewhere, to the next regular meeting of the Society for discussion and approval.

(e) To report on questions of finances, ethics, commercialism.

Fifth—Executive Committee of Research Committee: (a) One of the sub-committees of the Research Committee shall be known as the Research Executive Committee, and shall be composed of four members, one of which shall be chairman of the Research Committee. The Research Executive Committee shall conduct all the business of the Research Committee. It shall make the necessary contracts for rental and purchasing of equipment or material. It shall select and employ the director and such assistants of the Bureau of Research as may be required. It shall determine all salaries and approve of all expense incurred. It shall determine the rotation in which the subjects shall be investigated by the Bureau of Research.

(b) The Executive Committee shall not make contracts in excess of the income to the Research Bureau without the approval of the Research Committee and the council.

Sixth—Chairman: The chairman of the Research Committee will be ex-officio member of all sub-committees.

Seventh—Approval: (a) All acts, findings or reports of sub-committees shall be subject to the approval of the Research Committee.

(b) All acts of the Research Committee shall be subject to the approval of the council.

Eight—Finance: (a) Each chapter of the Society shall appoint a Research Soliciting Committee, who once per year shall conduct a campaign in their locality to procure funds for the maintenance of the Bureau of Research. Committees may be appointed by the Research Executive Committee in other localities not covered by the chapters to carry on such a campaign in their respective territories.

(b) All moneys received for the Bureau of Research shall be kept by the treasurer of the Society as a separate fund and used only for the purpose specified.

(c) The Research Bureau shall operate upon the budget plan. All payments from the Research Bureau fund are to be made by the treasurer in accordance with the existing present plan of payment of the Society's bills, as authorized by the

council meeting of August 16, 1917, excepting that certification of the voucher by the secretary of the Society is to be replaced by certification by the chairman of the Research Committee or the Research Executive Committee. All special items corresponding are to be approved by the Research Executive Committee instead of the finance committee of the Society.

Ninth: Reports of activities of the Research Bureau shall be sent to all members of the Society and to all subscribers to the Research Bureau Fund.

There will be attached to this report a list of all those who have subscribed to the fund. It may be mentioned, however, that in addition to making a money subscription, the Taylor Instrument Company, of Rochester, has offered to lend to the Bureau of Research all instruments which it manufactures which may be needed by the Bureau of Research.

Three other motions from the floor, governing the society's research activities, were also adopted. These provide that each chapter have a research bureau campaign of its own in its respective territory, that the bureau be operated on the budget plan and that the incoming president nominate the first complement of fifteen men before adjournment so that the work of the bureau may be started at once.

President Still's Report.

President Fred R. Still, of Detroit, presented a comprehensive report in which, among other recommendations, he suggested the establishment of a new class of membership to be known as "Apprentice Membership" to permit the younger employes of firms connected with the profession to be admitted.

In commenting on the society's part in war work, he said:

"Shortly after our country entered into the war the services of this society were offered to the various branches of the Government in any capacity in which it could serve. It was not long before we were called upon to aid in solving many difficult problems, and it is a pleasure to reflect upon the splendid way in which everybody responded when called upon to do committee work or perform any other service for the society. Many momentous questions have arisen, requiring instant decision and quick action. On the other hand, many long journeys have been made and time spent making careful investigations, to be followed by days and weeks spent in making a thorough analysis of the problems and writing lengthy reports and recommendations. In every instance all these things were cheerfully done at the expense of the individuals selected for the task without a suggestion that it might be a hardship to do it."

He also commended the work of Secretary Obert and other officers, saying:

"The brunt of the actual work of the society has this year fallen upon our worthy secretary. His work has been multiplied tremendously, and he has uncomplainingly endeavored to do it without additional help. He has been alive to the necessity for rigid economy, and has managed the office the same as if it were his private business. We have been compelled to ask him to assume unusual responsibilities, as few of the officers or the members of the council have been accessible to consult with or to get together when an emergency arose. We think it has been an unusual experience for him, as heretofore he has been able to rely upon the advice of the council. We are pleased to say that he has proved himself equal to the occasion, and he has my personal thanks for his splendid work and painstaking efforts.

"It is not only my duty, but it affords me the greatest pleasure as well, to thank most heartily all the officers and committee men, and the council and the members generally for their splendid co-operation and loyal support throughout the year. Never before have I experienced such a fine spirit, of unselfish determination to help in any capacity that might be named. A suggestion has been equivalent to a command, and any work attempted has been completed, so far as it was possible.

"Singling out a few as examples, but with no idea of lessening the importance of those not mentioned, I would call your attention to the work done by the Committee on Research Bureau. This committee has done an immense amount of hard work; the members have traveled extensively, held numerous meetings, have listed every concern and individual in the heating and ventilating business that could be located.

"Ex-President Lyle was the chairman of that committee, and at the same time was the chairman of the committee to confer with the Bureau of Mines. To this latter committee was referred the matter of "fuel conservation" at the solicitation of the United States Fuel Administrator. The members got to work promptly and submitted a very comprehensive report, which evidently had a material influence in shaping the plans of the fuel administration, judging from subsequent recommendations emanating from that department.

"The committee to co-operate with the United States Navy Department also has done some very creditable and praiseworthy work, under the chairmanship of Vice-President Walter S. Timmis, which has been gratefully acknowledged by the Navy Department, and as a result of which there will likely be some radical changes made in the method of heating and ventilating battleships and submarines in the future. The work of this committee is far from complete, however, and it should be continued indefinitely.

"Two committees on dehydration have been studying the question from two different angles, but with the single purpose of finding ways and means of preserving and saving food. This work has entailed a lot of investigation, experimentation, travel, correspondence and consultation, which it is to be hoped may ultimately lead to great economic good to society, although there still remains a vast amount of work to be done and an intensive educational campaign promoted before the public will be ready to generally undertake this method of preserving its food supply, even under the most adverse conditions. The work of these committees should be continued until such time as it can be definitely settled whether or not further effort is worth while.

"All of the standing or special committees besides the aforementioned have done all that it was possible for them to do under the adverse conditions as a result of the war. It is probable that better results may be forthcoming now that the war is over and that those committees which have been largely inactive this year may be able to double their activities next year to compensate for the time lost. All the work assigned to the various committees is of the utmost importance, and should not be neglected nor unnecessarily deferred."

Speaking further on the engineering needs of the society President Still said:

"A standing committee should be appointed to study conservation of national resources and be prepared to act with other organizations for a similar purpose. A part of the work to be undertaken by such a committee would be the construction of buildings to better insulate them against extremes of heat and cold, to promote rules for properly firing furnaces, to handle ashes and keep down dust, to devise methods for instructing the public in conservation, to inspect and pass on the acceptability of the many heating and ventilating devices offered for sale, to prevent the public being swindled.

"Another important standing committee, more important now than heretofore, is a committee on legislation. This is about the only business which has not been regulated by law. The tendency of the times is to regulate everything we do. Spasmodic efforts have been made in some of the states to pass inspection laws governing the plans and the operation of heating and ventilating plants, which goes to prove that this society should be prepared to have a voice in the framing of any of the laws that are ultimately bound to come.

"The standard form for ventilation laws which were adopted by the society some years ago should be revised to conform with present-day standards, in the light of newer discoveries since those rules were adopted. No other authorities need hardly be consulted than the proceedings of this society to find what is the latest and best thought in this respect, and what should be changed, eliminated or added."

Tellers for the annual election of officers appointed by the chair were: James A. Donnelly and F. T. Chapman, of New York, and C. A. Booth, of Buffalo.

The reports of the council and secretary were both presented by Mr. Obert. It was especially noted that in spite of the detraction of war work, seventeen committees at work during the year had been unusually active.

In Memory of Professors R. C. Carpenter and William Kent.

Albert A. Cary, one of the founders of the society, paid a high tribute to the memory of the late Professors R. C. Carpenter and William Kent, two esteemed members who died during the past year. Mr. Cary in paying this personal tribute dwelt on the important part these two men had played in the development of the society.

A committee, consisting of A. A. Cary, C. L. Riley and W. S. Timmis, was appointed to draw up suitable resolutions expressing the sympathy of the organization on the death of these two valued past-presidents; copies to be sent to their families.

Research Activities.

Another feature of the first session was a talk by Prof. O. P. Hood, chief engineer of the Bureau of Mines. He told the members of the half-million-dollar plant the Government had erected in Pittsburgh, which has been the forerunner of fifteen other stations subsequently opened throughout the country and spoke of the great good that would develop from the co-operation of the bureau with the research activities of the society about to be started.

Prof. Hood exhibited and explained two reels of motion pictures, showing the work done at the laboratories of the bureau at Pittsburgh and in the field. He emphasized the necessity of buying coal on specification of heat unit content instead of dealers' reputation.

George A. Orrack, chairman of the Research Committee on Heat Transmission of the American Society of Mechanical Engineers, read a paper briefly presenting the need for co-ordination of work in determining heat transfer through mediums. He stated that 90 per cent of the research work along this line is wasted effort and hoped that subsequent co-operative work would result in a definite determination of values.

Letter from Fuel Administrator H. A. Garfield.

A letter of thanks was read from Fuel Administrator H. A. Garfield, for the excellent work the society had done in its investigation of extravagant use of coal. The letter constituted a report of the committee appointed to co-operate with the Bureau of Mines.

The Ventilation of Battleships.

W. S. Timmis as chairman of the committee to confer with the Navy Department on the heating and ventilation of battleships and submarines promised a detailed report of his committee's work at a later date, when the need for secrecy is removed.

Two New Chapters.

Two applications for charters for chapters were granted. These will be known as the Western New York Chapter, with headquarters at Buffalo, and the Western Pennsylvania Chapter, at Pittsburgh.

Testing Radiators.

A lengthy report of the committee on standard method for testing radiators was presented. Prof. J. R. Allen said it is important that a standard kind of room for making such tests be determined upon.

Election of Officers.

The report of the tellers showed the election of the following officers for the ensuing year:

President: Walter S. Timmis, 315 Fifth Avenue, New York.

First Vice-President: E. Vernon Hill, 704 City Hall, Chicago.

Second Vice-President: Dr. Milton W. Franklin, 240 West Somerset Street, Philadelphia.

Treasurer: Homer Addams, 47 West Forty-second Street, New York.

Members of the Council:

Howard H. Fielding, 618 Boston Building, Denver, Colo.

Harry E. Gerrish, 501 South Sixth Street, Minneapolis, Minn.

George B. Nichols, Albany, N. Y.

Frank G. Phegley, 706 Rose Building, Cleveland, O.

Fred W. Powers, 5 South Wabash Avenue, Chicago.

R. W. Pryor, Jr., 39 Cortlandt Street, New York.

Chaplain L. Riley, 101 Park Avenue, New York.

F. R. Still, 1400 Russell Street, Detroit, Mich.

Tuesday Evening.

Eight o'clock Tuesday evening, found the meeting again convened for the first professional session. Ventilation and air conditioning was the subject discussed. The subject was presented in three excellent papers: "Experiments in Air Conditioning the House," by Dr. E. R. Hayhurst; "Air Washing and Humidification for School Buildings," by Perry West, and "The Argument Concerning Mechanical and Natural Ventilation," by Dr. E. Vernon Hill.

Ventilation and Air Conditioning.

It was the consensus of opinion that publicity for air washing and popularizing the necessity of conditioning air is a most important matter.

Mr. Hallett commented upon the added necessity for sterilizing the water used in washers.

It was also pointed out that the greater percentage of human ailments comes from a person's own home as against public buildings, and that the home had been ignored in advocating air treatment.

Dr. Hill's subject, which was a forceful and emphactic reply to the controversy over different ventilation requirements for occupied rooms, was fully discussed, and entire agreement manifested on the importance of considering dust, bacteria and CO_2 content as factors in determining and supplying air requirements.

Adjournment was taken at 11:00 o'clock.

Wednesday Afternoon.

When the members assembled for the day's work at 2:30 on Wednesday afternoon, Secretary Obert read a letter from the Boston Chapter, in which President A. S. Kellogg told of the revived enthusiasm in the chapter's activities.

F. N. Speller presented a brief résumé of recent developments in his experiments on rusting in hot water sup-

ply. The significant feature developed by the deoxidization of the water, a process which was explained by him at a past meeting, is that the deoxidization stops entirely the usual galvanic action, where steel and brass are used in conjunction on a system.

"Air Duct Design" was the subject of a paper by Leo Kraft.

Many of those who discussed the subject contended that branch ducts without dampers cannot be designed on static pressure calculations only, as seemed to be the theory advanced in Mr. Kraft's paper.

A paper read by F. J. Hoxie presented some interesting facts effecting the rotting of timbers in factory roofs. The author contended that 75 per cent of the roofs in industrial buildings are constructed of wood, and it is up to the heating engineer to protect such timbers with suitable apparatus that will keep them above the dew point, an important factor in roof decay.

E. R. Knowles presented a paper containing a compilation of methods for determining dust content of air and gases.

President Still, in commenting on the subject, said it is important that an adequate standard be determined upon as the engineer and physician will lock horns on the matter of air requirements before long.

In a communication from the New York State Labor Commission the question was asked whether it is necessary or more desirable to heat air before its introduction into a room or introduce it at outside temperature and then provide sufficient heating surface to maintain the desired temperature in the room.

The question was considered of moment as another phase of the natural versus mechanical ventilation, and as a committee to reply to the commission the chairman appointed Messrs. Hallett, Allen and Claffey.

"Mine Ventilation" was a subject discussed at considerable length at this point.

An interesting impromptu talk on the problems presented in the construction of the Government powder plant at Nitro, W. Va., was given by W. H. Driscoll, who installed the mechanical equipment.

Resolutions Adopted.

Before adjournment the meeting voted favorably on the following resolutions presented by Mr. Timmis and based on the recommendations by President Still, in his annual report:

That the constitution be revised to embrace Mr. Still's recommendations and a committee be appointed for the purpose and report at the summer meeting.

That the society adopt a standard form of chapter constitution and a committee be appointed to present such form.

That a standing committee be appointed for the consideration of questions of conservation of national resources.

That a standing committee on legislation be inaugurated, the purpose of which, as President Still pointed out, is not to influence legislation, but rather to guide it in proper channels and guard against acts deleterious to the science of heating and ventilation.

Wednesday Evening.

At the Wednesday evening session the society adopted some changes in the existing code for testing house heating boilers, which were contained in a report of the committee. With the minor revisions adopted the code will be known as the 1919 code. Among other things the revised instrument provides for the optional use of the running start or dead start as may best be adaptable to the case at hand.

"Clean-Out Openings in Heating Boilers" was a subject introduced for discussion by James A. Donnelly, who said he has found it advisable to specify such provision in numerous instances so that the boiler may be freed of the miscellaneous foreign matter, such as coal, sand, grease and joint cement, which does get into the boiler and create mischief.

Chairman Cooper, of the Committee on Schoolhouse Standards, presented some valuable charts showing the relations of various factors in school construction, which were accepted as a report of progress.

Thursday Morning.

The fifth session of the meeting, called at 10:00 o'clock Thursday morning, was given over to temperature control and proved highly interesting. A paper covering "Fuel Conservation by Means of Automatic Temperature Regulation," by F. A. De Boos, and a report of the committee on "Automatic Heat Control," opened the subject.

Temperature Control.

Mr. Williams suggested that in addition to control, an indicating system to take care of the human element, by guiding the fireman in conserving the fuel, which the regulating system saves, would be a decided improvement.

Mr. West said that the relative humidity and air motion are factors not taken care of in heat regulation systems. He pointed out that tests show that in a condition where, for instance, the wet bulb would show 56 degrees and the dry bulb 70 degrees, indicating a relative humidity of 45, a slight variation in the wet bulb temperature of even one degree will make a perceptible difference in comfort, whereas the dry bulb could vary eight degrees without discomfort to the occupant of the room.

Window Shades as Fuel Savers.

Prof. John R. Allen read a brief paper in which he pointed out that according to tests made by him window shades when drawn save 20 per cent of the heat losses of glass. Using an additional shade such as cover the window beyond the side sash over the inside wall a saving of 40 per cent was noted.

The session concluded with the discussion of automatic roof ventilator capacities.

Thursday Afternoon.

The final session convened at 2:30 o'clock Thursday afternoon, and opened with a paper by Konrad Meier, of Switzerland, entitled "Limiting the Fuel for Domestic Heating," in which the author presented some interesting data on fuel rationing in Switzerland. The purpose of the paper was to offer information as to the situation there, which he shows would indicate that a lower limit, than that proposed in the United States, might be possible and profitable.

Mr. Allen pointed out that there is quite a difference in consumption of fuel per room in various parts of this country. Properly built and insulated houses in low temperature climates actually use less fuel than buildings in the milder climates. Indicating, he said, that great economy could be secured, if proper attention were paid to construction.

M. W. Ehrlich read a paper, "Engineering Economics of Heating," in which the point aimed at was a determination of the average heating season and the use of weather conditions as a basis of figuring heating requirements rather than coal consumption to cubic contents of building heated.

"By-Product Coke" was given attention in a paper by W. T. Harms.

Mr. Breamer brought up the subject of Weather Bureau

(Continued on Page 287.)

ILLINOIS MASTER PLUMBERS *in* SUCCESSFUL CONVENTION

Spend Three Busy Days at Danville, Discussing Trade Problems—Re-elect C. D. Brownell President

THE Illinois Master Plumbers' Association held its twenty-seventh annual convention in Danville, Ill., on Tuesday, Wednesday and Thursday, January 28th, 29th and 30th, with headquarters at Harrison Hall. A large number of members and delegates, from all sections of the state, was in attendance, when the meeting was called to order at 10 a. m., Tuesday, January 28th, by State President C. D. Brownell, of Champaign.

After the invocation by Rev. G. H. Simonson, E. E. Payson, president of the Danville Association, welcomed the delegates on behalf of the local members.

A representative of the mayor welcomed them in behalf of the city, and P. L. Wills, president of the chamber of commerce, gave an address of welcome in behalf of the Danville Chamber of Commerce. In his address, Mr. Wills called attention to the fact that the human body is composed of 85 per cent water. The most important thing in life is to see that that 85 per cent supply is maintained with pure water, and, inasmuch as the master plumber is the one in the community who looks after the sanitation of the water, he can easily claim to be the most important factor in the community. He also spoke of the benefits of organizations and conventions, and said that if the government wanted to totally paralyze industry and progress, they would stop conventions such as this one; that men in different lines of business, who do not go to conventions and exchange ideas with others, do not avail themselves of their greatest opportunity.

After a brief response by State President C. D. Brownell, the convention settled down to work, following its printed program.

Fred Greiser, of Danville, was appointed sergeant-at-arms.

J. W. Cannon, of Chicago, National Director; J. L. Robertson, of Mason City, Past State President, and E. C. Wagner, Treasurer of Chicago Master Plumbers' Association.—From "Domestic Engineering" Photo.

Jos. W. Cannon, of Chicago, was unanimously elected reading clerk, and read letters of greetings, received from the following:

National Director C. H. Maloney, of Gary, Ind.; S. V. Hanley, president of the Wisconsin association; W. J. Woolley, president of the Indiana Society; W. C. McCarten, president of the Iowa association; W. W. Hughes, president of the Minnesota association, and A. A. Zertanna, president of the Missouri association.

The committees were composed, as follows:

Escort Committee(appointed): J. L. Robertson, of Mason City, and J. J. Cahill, of Evanston.

E. J. Ryan, of Danville, Treasurer of the Illinois Master Plumbers' Association; C. J. Herbert, of Chicago, Treasurer of the National Association, and C. J. Boyd, of Chicago, Past President of the National Association.—From "Domestic Engineering" Photo.

Auditing Committee (elected): J. J. Daly, of Chicago; J. Ruddy, of Aurora, and E. E. Payson, of Danville.

President Brownell's Report

President C. D. Brownell thereupon read his annual report, in which he told in detail of the many activities of the association during the past year.

Short excerpts from this interesting document follow herewith:

"We have just passed the twenty-seventh milestone of our journey as an association, and this last lap has been filled with many new experiences, and interesting events, with but few opportunities for progressive association work, and therefore this, the twenty-seventh annual report of your president will not record as many or as valuable accomplishments as have been made by previous administrations.

"It is needless to recall your attention in detail to the many unusual conditions, under which we have been conducting our business the past year, with a demand and a great desire on our part to support the Government in a financial way with limitations placed on our earning power by the apparent necessity to conserve the man power and finance, ordinarily employed in the building industry. Therefore, with the field of our activities rapidly narrowed and closely confined, our usual activities in educational and trade building or extension directions, have been curtailed to practically nothing to afford us due opportunity of lending all our resources and energy toward winning the war. And now that that has been done, a wonderful field is opening before us, so full of new and varied possibilities that it is almost bewildering

to endeavor to select a route through the new land, that will permit us to accept the largest tasks, and perform the best service in the shortest time. The new things to come, therefore, open up large opportunities, but as well impose a serious-minded task in their successful accomplishment, and, in accepting this larger charge, let us do so with the earnest conviction that we will make good in its conduct, as we have succeeded in the accomplishment of those tasks to which we directed our energies in the past.

Departmental Work.

"The scheme of Past President Gause in dividing the work of the association into various departments, each of which was headed by a member of the Board of Directors, proved to be of such merit and advantage during his administration that it was continued during the past year with the following appointees, who will make a report later of their transactions:

"Mr. Gause was appointed as chairman of the Organization Committee, Mr. Benning on the Publication Committee, Geo. S. Moore, the Insurance Committee, and Messrs. Robertson, Johnson and Barrett have composed the special Legislative Committee, in whose hands has been the task of preparing necessary amendments to the present plumbing law.

Membership.

"That the stress of unusual and unfavorable business condtions did not deplete our membership to a great extent, is most gratifying and encouraging. This condition shows that our members are taking an increasing part in the work of our association, and thereby showing an appreciation of what collaboration in the channels of trade association can accomplish. This loyalty to the association should inspire those in charge of our affairs to still greater efforts in the future. The report of the secretary will show in detail the facts relating to our present increase in membership.

Finance.

"The finances of your association are in a very satisfactory condition, as will be shown by the detailed report of the secretary and treasurer. A substantial balance is shown, after all known indebtedness is paid. We were able this year to have paid at this time the National per capita tax, and practically all of our incidental and organization expenses to date, so that the statement will show a real working capital.

National Association.

"The destinies of our National Association are again under the guidance of President L. McNamara and the corps of able assistants, which he has selected to aid him, and to doubt that we will be guided into better and larger things would be to belie the results of his past energetic efforts in our behalf. The Educational campaign being conducted by the National Association is especially commendable, and should be carefully followed and practiced by each one of us, not only for the great benefit that would accrue to us, but also as a mark of appreciation of their efforts. Our relations with the National Association have indeed been most pleasant.

National Director.

"The importance of Illinois in National affairs was recognized, and we were honored in the appointment, by President McNamara, of Jos. W. Cannon, of Chicago, as a member of the National Board of Directors for the ensuing year, and we need not fear that the interests of Illinois and the welfare of National affairs are not in able and willing hands, and we can be assured that they will be properly looked after.

Uniform Contract.

"The plumbing industry throughout Illinois, being conducted on practically the same general lines, and the requirements of the construction and contracts covering same, being so nearly uniform, it would seem the part of wisdom to have the Master Plumbers of Illinois use a uniform contract form, especially prepared for this business, and so constructed as to safeguard the interests of the plumber. I have found that too little attention has been paid in the past to the preparation of a protective contract with the owner, and too often none whatever has been required, fearing, as many members have expressed it, to offend the customer, because they may be financially responsible. This is a fallacy, that should be destroyed, for in a majority of cases the customers' financial responsibility is directly traceable to the fact that they always protected themselves with sure-fire contracts in their dealings with others.

"No honest person will object to a fair and workable contract between men and will forget the sentiment. If an objection is raised, it should act as a beacon light for dangerous shoals.

"We are, therefore, glad to announce that we have on our program a discussion of this important question by one who

Delegates and Guests Attending the Twenty-Seventh Annual Convention o

has made a special study of this subject from the plumbers' standpoint, and wholly competent to speak on the subject."

In his report President Brownell also referred to the questions of insurance, convention exhibits, advertising, government contracts, cash discounts, etc.

After the reading of the president's able report, the entire convention arose and stood in silence a few moments to the memory of J. J. Wade, one of the founders of the National Association of Master Plumbers, and one of the oldest and most ardent members of the Illinois State Association.

Tuesday Afternoon.

The afternoon session opened with the reading of the annual report of State Secretary W. C. Haviland, which follows herewith in part:

Secretary Haviland's Report.

"One year ago, when we held our convention at Bloomington, the world was engaged in the greatest and most cruel war that was ever known. This country was beginning to show a preparedness that her enemies had not dreamed she would ever be able to do. Within ten months from that time the armistice was signed, and today the great problem is how to get the boys from over there back to civil life, without disturbing business too much. The Government and the business interests of the country are co-operating to find a solution of the question.

"Since the last convention the following have been placed on our roll of honor: Alton, Chester A. Davis: Aurora, E. J. Farrell and Walter J. Ruddy; Chicago, Louis J. Certhaml, Chas. Kidl, Robert W. Smith and J. G. Zajuck; Christopher, Frank J. Roe; Rockford, A. W. Carlson; Sheffield, Henry Faud and Edwin T. Hortz: Springfield, Chas. A. Walz; Waukegan, Chas. Badeker, Jr., and J. R. Reilly. Nearly all arrived overseas and took part in the conflict. The Hortz brothers, members of the firm of E. F. Hortz & Sons, where the only ones, we have learned of, that made the supreme sacrifice. Henry F. was killed in action September 14th, and Edwin T. died of meningitis September 15th, both in France. In a family of eight children, these were the only boys.

"Walter J. Ruddy received a shrapnel wound in the arm. While convalescing, the Government returned him to the United States. He was assigned to the list of Liberty Loan speakers, and toured the East for several weeks. He is on our program for a short overseas talk. As far as we have been able to learn, these are the only ones of our members who were in the casualty list.

"The past year has been the most peculiar year we have ever had for organization work.

"The enforcement of the new plumbing law by the Department of Regulation and Education caused a great many to discontinue the business, and others quit on account of the business conditions. Chicago has had a net loss of 70 members, from 510 to 440. Thirteen new members were added and 83 lost. The state, outside of Chicago, has added 80 new members and lost 85, leaving a membership of 493, making a total membership in the state of 933, a net loss of 75.

"On account of the war, speculative building in Chicago came to a standstill. This in a large measure accounts for the loss of members there.

"Everything considered, I believe we have cause for congratulating ourselves on the showing made.

"Among those who assisted your secretary in securing new members, traveling to other cities, were President Brownell and George S. Moore, of Evanston."

Following the secretary's report, reports were made by the Executive Committee and State Treasurer E. J. Ryan, of Danville.

President C. D. Brownell read the Educational Committee's report, and the following committees were named:

Resolution Committee:—E. E. Payson, Danville, chairman; C. Ruddy, Aurora; W. F. Hildeman, Chicago Heights; Robert Hilton, Chicago, and Geo. W. Ernest, Quincy.

Credentials Committee:—T. A. Lederer, Bloomington, chairman; Oscar Erickson, Moline, and M. J. Kickham, East St. Louis.

Memorial Committee:—C. A. Dreier, Chicago, chairman; Richard Johnson, Champaign; Jas. Haeggquist, Rockford; J. J. Cahill, Evanston, Wm. Crowley, Peoria.

Mr. Payson's Essay on "Service."

A very interesting essay was read by E. E. Payson, of Danville. Taking as his subject "Service," he advised those present to make service the most important thing in their business. The better service we can render a customer, the better pleased he is, and the better price we can charge for same. Service will long be remembered, after the price has been forgotten.

In closing, he advised those present to read their trade papers and keep their eyes and ears open for helpful suggestions, and he impressed upon them the fact that successful business means successful service.

...is Master Plumbers' Association, Held in Danville, Ill., January 28, 29 and 30, 1919.

Compensation and Liability Insurance.

Workmen's Compensation and Liability Insurance was the subject of a carefully prepared paper by C. S. Somerville, of the Lumberman's Mutual Casualty Co., and the points he brought out made all sit up and take notice, causing much discussion.

Bernard Gause's Report of St. Louis Convention.

A report of Bernard Gause, who was delegate-at-large at the last national convention at St. Louis, was listened to with much interest. An hour's general discussion on topics of interest to all brought this session to a close.

Wednesday Morning.

Wednesday morning's session was given over to speech making and the reading of reports.

Rockford Delegates at the Danville Convention of the Illinois Master Plumbers' Convention.—From "Domestic Engineering" Photo.

Geo. S. Moore, of Evanston, chairman of the Insurance Advisers' Committee, told of the valuable work that his committee did among the members. He said that, in the progress of his work, he was greatly surprised to learn that many master plumbers do not carry compensation insurance. He went into detail and pointed out the advantages and costs of compensation and public liability insurance. In closing he said that no master plumber could afford to be without both classes of insurance.

At this point, a letter was read from Uncle Jos. G. Cannon, in which he explained the cause of his absence, and said that he regretted his inability to be present to address the convention.

Walter J. Ruddy, of Aurora, made a very interesting talk on the war, and told of some of his experiences as a member of the Sixth United States Engineers in France. Mr. Ruddy's company was reduced from 253 men to 47 in less than two days' time at Chateau Thierry, he being numbered among the wounded. He spoke of the wonderful spirit of the Yanks, and ended his talk by paying a high compliment to the American Red Cross.

Wm. J. Woolley on "Trade Extension."

Wm. J. Woolley, president of the Indiana Society of Sanitary Engineers and chairman of the publicity committee of the Trade Extension Department of the National Master Plumbers' Association, made a short address, telling of the work and aims of that branch of the association's work. He said that the average master plumber and salesman follow the lines of least resistance in making a sale, and advised them to get away from that habit. He pointed out the value of developing sales of various specialties, and told of the success he had in a recent campaign, when in a short time he sold and installed more heat regulators in his vicinity than had been installed in the entire state in a year. He spoke of the progress of the plumbing fraternity, and said that the time has passed when you have to beg a man to join the association, as nearly all realize the importance of co-operation. In concluding, he said that the supply houses are now interested in trade extension work, and he advised every plumber to keep his supply house interested by continually talking it to every salesman that calls at his place of business.

The Overhead Expense Question.

The report of the Legislative Committee, by its chairman, John L. Robertson, was followed by a general discussion with blackboard illustrations. A simple question on overhead expense and profit was put on the board, and out of forty-one answers, only eighteen were correct, the others being divided among eleven different answers. The problem was as follows: "If material and labor amount to $100 and your overhead expense is 20 per cent, and you want a 20 per cent profit, what should be the selling price of the job?" The different answers ranged from $125 to over $200, while eighteen arrived at the selling price of $166.67.

Wednesday Afternoon.

The afternoon session was given over to making addresses, and discussing the proposed bill for a state plumbing code.

Wm. E. McCollum, secretary of the Illinois and Wisconsin Credit Bureau, told of his work in connection with the plumbing and heating trade.

Water Systems for the Farmer.

T. E. O'Brien, president of the Leader Iron Works, Decatur, Ill., spoke on "Water Systems." He advised the plumber to get in closer contact with the farmer, and said that the time is close at hand when the country water supply will come into its own. He explained that, because of automobiles and good roads, there is more intermingling between the country and city folks, and that the farmer, with all other classes of people, is becoming more interested in the necessity of sanitation, and will demand it. He touched on the conditions of business today and advised every plumber to study some particular line of sanitary equipment, and specialize in that line, and be a merchant in that line. In commenting on the Trade Extension movement, he said that he thought the one big thing is the binding together of the elements that bring all plumbers, supply houses and manufacturers together.

Part of the Danville Delegation at the Danville Convention of the Illinois Master Plumbers' Association.—From "Domestic Engineering" Photo.

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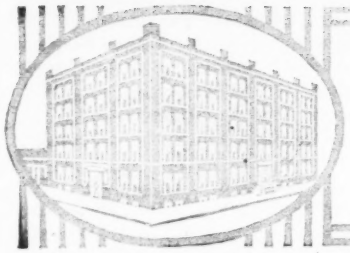


Among the Wholesalers and Manufacturers

S. H. MOON ELECTED FIRST VICE-PRESIDENT OF THE STANDARD SANITARY MFG. CO.

S. H. Moon, secretary-treasurer of the Standard Sanitary Mfg. Co., of Pittsburgh, Pa., has been elected first vice-president of this company, succeeding the late Francis J. Torrance, whose death occurred last month. Mr. Moon will retain the office of secretary-treasurer.

CRANE COMPANY BUYS JOBBING BUSINESS OF ROCKFORD BRASS WORKS.

Crane Co., of Chicago, has purchased the stock and jobbing business of the Rockford Brass Works, at Rockford, Ill., and will operate this business as one of its branches. The Rockford Brass Works will continue to operate its manufacturing plant as heretofore.

STANDARD SANITARY MFG. CO. DECLARES DIVIDENDS.

The Standard Sanitary Mfg. Co., of Pittsburgh, Pa., has just declared its regular quarterly dividend of 1¾ per cent on the preferred stock and 1½ per cent on the common stock. The checks will be mailed February 10th to stockholders of record February 4th.

TRENTON POTTERIES CO. DECLARES DIVIDENDS.

The Trenton Potteries Co., of Trenton, N. J., has declared a divided of 2 per cent on its non-cumulative preferred stock. The dividend was declared at a meeting of the board of directors recently held at the main offices of the company.

RICHARDSON & BOYNTON CO.'S ANNUAL MEETING.

The following officers were elected at the annual meeting of the board of directors of the Richardson & Boynton Co., New York City: D. R. Richardson, president; W. R. Eaton, secretary; D. S. Richardson, treasurer and chairman of the board of directors.

COMPANIES RECENTLY INCORPORATED.

Two corporations, the Corcoran Supply Co., of Brockton, and the Corcoran Supply Co., of Cambridge, have been granted Massachusetts State charters recently. Both concerns are capitalized at $60,000 and will deal in plumbing and heating specialties. The incorporators of the Brockton corporation were Joseph F. Corcoran and Raymond O. Sullivan, both of Brockton, and Joseph W. Keith, of Bridgewater. For the Cambridge company Joseph F. Corcoran and Sadie B. Burke, of Brockton, and Joseph W. Keith, of Bridgewater, acted as incorporators.

THE ANNUAL MEETING OF THE NATIONAL COMMITTEE OF THE CONFEDERATED SUPPLY ASSOCIATIONS.

At the annual meeting of the National Committee of the Confederated Supply Associations held in New York City, on January 23rd, the following officers were elected for the ensuing year: President, L. O. Koven, of L. O. Koven & Bro., Jersey City, N. J.; vice-president, John Walker, of Walker Manufacturing & Supply Co., Detroit, Mich.; treasurer, DeWitt Cook, of W. V. Egbert & Co., Newark, N. J.; secretary, Frank S. Hanley, New York City. Directors: L. O. Koven, John Walker, DeWitt Cook, Clarence V. Kellogg, of the Kellogg-Mackay Co., Chicago; E. S. Aitkin, of the Trenton Potteries Co., Trenton, N. J., and deCourcey Cleveland, of the Central Foundry Co., New York City.

THE FEBRUARY MEETING OF THE ILLINOIS CHAPTER OF A. S. H. AND V. E.

The Illinois Chapter of the American Society of Heating and Ventilating Engineers will hold its regular monthly meeting on Monday evening, February 10th, at the Chicago Engineers' Club, 314 South Federal Street, Chicago. The usual dinner will be served at 6:30 o'clock and the meeting proper will begin at 7:30. The speaker of the evening will be Lieut. Wagenseil, who will relate his "Personal Experiences in the War." Lieut. Wagenseil has just returned from the front and has consented to show a large number of photographs taken there. Secretary A. E. Stacey bespeaks a large attendance for this meeting.

F. S. HANLEY ON THE NEW REVENUE BILL.

Frank S. Hanley, of New York City, secretary of the National Committee of the Confederated Supply Associations, in calling the attention of members to the new revenue bill, and urging them to protest against Section 1409, writes as follows:

"We call your attention to Section 1409 of the 1918 Revenue Bill. We are informed this will compel you within sixty days of the passage of the act—to file with the Government a true and correct copy of every contract, undertaking or transaction, together with a complete statement of all work, material or property, and all moneys received, expenses incurred and profits made from such contract or transaction, since April 6, 1917. In other words, you will make a duplicate record of your business for nearly two years within sixty days of the passage of the act. This will be one of the most laborious operations that can be placed upon manufacturers and wholesalers, providing this section becomes law. This is a very serious matter and requires your prompt attention. We therefore suggest that you get in touch with your senators and congressmen and protest against this section becoming a part of the Revenue Bill."

OPENS PLANT AND OFFICES.

The Sanibrass Corporation has been organized to manufacture showers and bath fixtures and has opened plant and offices at 17-27 Liberty Street, Brooklyn, N. Y. Leon Bloch, who has been connected with the trade for the past sixteen years and during the last four years manager of the New York office of the Glauber Brass Mfg. Co., is president of the new company.

ROBERTS FILTER MFG. CO. ANNOUNCES CHANGE IN PERSONNEL.

Wilbur S. Wilding, formerly in charge of the New York office of the Roberts Filter Mfg. Co., has been appointed manager of sales with headquarters at the company's main office at Darby, Pa. Thomas C. Cummins, who recently returned from Washington, where he had been in charge of the purchases of water purification plants for the War Department, succeeds Mr. Wilding as manager of the company's New York office.

KEWANEE BOILER COMPANY'S FIFTH ANNUAL FAMILY DINNER.

The officers, the branch house managers, the sales and office forces, and the superintendents and foremen of the Kewanee Boiler Co., of Kewanee, Ill., held their fifth annual dinner at the Parkside, Kewanee, Ill., on Tuesday evening, January 28th, with 110 men in attendance. Following an elaborate menu, President E. E. Baker opened the post-prandial program with a toast to the soldiers of the United States and Canada. Manager M. F. Moore was the next speaker. He paid a tribute to the company's salesmen, as well as to its men in the shop, and complimented them on their efficiency, which proved to be 100 per cent during the past year. The next speaker was T. A. Williams, of Salt Lake City, who paid a high tribute to the women of America. Secretary J. P. Dugger was thereupon introduced, and gave an exceedingly interesting talk on what he termed "The Installation of the Greatest Steam Heating Plant in the World—That at Great Lakes, Ill." He received a great ovation, when the company comprehended the size of the work, which he described. Homer Addams, of New York, was the next eloquent speaker. His remarks won the vigorous applause of his hearers. Witt K. Cochrane, of Chicago, told about how much he enjoyed to come to Kewanee, which he termed an ideal American community, where the spirit of real American Democracy is seen at its best. Dan Moore, of Kewanee, and P. M. McMichael, of Toronto, were the last speakers, and both received generous applause for their efforts. Fine music and good singing enlivened the evening's enjoyment. Sales Manager H. E. Pursell, who had charge of the arrangements for the event, was congratulated upon having made this dinner the best of the five that the company has held.

SHORTAGE OF HOMES IN UNITED STATES NOW TOTALS NEARLY A MILLION.

The Department of Labor has published the following report in "The Official U. S. Bulletin":

"Twenty-five representatives of building and loan associations, from almost every section of the United States, in a recent conference in Washington formulated the following statement on building conditions:

"In normal times, under normal conditions, it required the building of about 600,000 homes per year to supply the normal growth of the country and replace the losses occasioned by fire and other destructive agencies. For the past two years, owing to causes growing out of the world war, this normal construction of homes has been practically suspended. What housing construction has been accomplished has been for the major part, that which was demanded to meet war conditions. Shortage of labor and restrictions on the use of building material stopped the work.

"At this time there is a shortage of homes in America of nearly a million, to which must be added the normal requirements of the year just opening. Most of the present shortage has not been wholly abandoned, but has been merely postponed and delayed, and the pressure to inaugurate and complete this delayed construction will shortly be felt, as soon as weather and climatic conditions make such work feasible.

"The demobilization of the military and naval forces now in progress, and the release of workmen from the shipbuilding and munition plants and other war industries furnishes the supply of labor which has hampered building for the past two years, and the removal of restrictions on the use of material and transportation, which so largely contributed to block home construction, all combine to make the resumption of home building now possible.

"The Division of Public Works and Construction Developments, Information and Education Service, of the Department of Labor, is now working with the building and loan interests endeavoring to work out a way to make liquid the associations' assets to the end that more money may be available for home building loans."

NEW CONSTRUCTION WORK.

Among the contracts being let for construction during the past week, as reported in "The American Contractor," are the following:

Private Work.

$550,000 blast furnaces, Farrell, Pa., Carnegie Steel Co.

$200,000 factory, Chicago, Fred Stearns & Co.

$75,000 manufacturing plant, St. Joseph, Mich., Auto Specialties Mfg. Co.

Municipal and State Work.

$500,000 vocational high school, Syracuse, N. Y., Board of Education and Board of Commissioners.

$200,000 government fuel yard, Washington, D. C., United States Government.

The following are being contemplated:

Private Work.

$1,000,000 auto manufacturing plant, Flint, Mich., Dort Motor Car Co.

$500,000 wholesale warehouse, Kansas City, Mo., Lee & Mercantile Co.

Municipal and State Work.

$15,000,000 to $20,000,000 railroad improvements and passenger station, Baltimore, Md., Baltimore & Ohio R. R.

$200,000 memorial building, Middletown, N. Y., city of Middletown, N. Y.

$150,000 postoffice building, Jeanette, Pa., United States Government.

$150,000 postoffice building, New Kensington, Pa., United States Government.

$95,000 high school, Willmar, Minn., Board of Education.

$50,000 to $550,000 each, 19 schools, Buffalo, Board of Education.

Plans are being drawn for the following:

Private Work.

$1,750,000 hotel and bath building, Chicago, Ill., Kercher Hotel & Bath Co.

$700,000, the Durant Hotel, Flint, Mich., United Hotel Co.

$700,000 apartment hotel, Cleveland, O., Paul Bros. Co.

$500,000 office and theater building, Cincinnati, O., B. F. Keiths Co.

$400,000 apartment building, Moline, Ill.

$300,000 factory, St. Paul, Minn., Griggs Cooper.

$200,000 tire fabric mill, Kent, O., the Mason Cotton Fabrics Co.

$150,000 publishing house, Brooklyn, N. Y.

$150,000 club house, Wilmington, Del., Elks' Home Building Association.

$140,000 factory, Joliet, Ill., Joliet Forge Co.

$125,000 commercial garage, Johnstown, Pa., Johnstown Auto Co.

$100,000 Moore Theater, Davenport, Iowa, stock company.

$100,000 church, Waterbury, Conn., Immaculate Conception Church.

$100,000 flour mill, Ellicott City, Md., C. A. Gambull Mfg. Co.

$100,000 office and manufacturing plant, Chicago, Ill., Bankers' Supply Co.

$100,000 to $400,000, Chicago, Ill., L. Z. Leiter Estate.

$87,000 machine shop and office building, Saginaw, Mich., Witts & Merrill.

GETTING READY FOR THE VICTORY LIBERTY LOAN.

The Government is asking for a spring billboard cleaning before the Victory Liberty Loan campaign begins. Hundreds of thousands of tattered old posters from former patriotic drives still cling to walls, windows and fences throughout the country.

It is recommended now by the heads of the district and state loan organizations that citizens everywhere get their premises in order for the new loan. Great patriotic enterprise, it is pointed out, was displayed by the people in offering window space, billboards, the walls of handsome new business buildings and other space for the posters of the various Liberty Loans and for the Red Cross, United War Work and other such campaigns. Positions such as no amount of money could buy for use by advertising agencies in the usual course of peace-time propaganda, it is explained, were offered free to the Government and to the semi-Governmental agencies helping to care for the armed forces. Property owners and tenants allowed their places of business and residences to be plastered over with these bills.

Now, however, the patriotic gift of this space will not be complete until all old posters have been removed and everything made ready for the reception of the new posters that are now being printed at Washington for distribution. Some ten million of these will be sent out to the various districts. It is greatly desired by the loan authorities that no trace of former literature be left to compete with the appeal of the Victory Liberty Loan posters. The old posters have long since disappeared from the regular billboards, but thousands of them are still in evidence in empty store windows, on fences and building walls.

New Trade Calendar.

The Hotstream Heater Co., of Cleveland, O., has issued a good-sized calendar printed in clear figures and in two colors. It will prove particularly valuable to motorists because it tells when we will have moonlight nights throughout the entire year.

Theodore Ahrens, president of the Standard Sanitary Manufacturing Co., of Pittsburgh, Pa., was in Chicago this week on his way to the Pacific Coast, where he will spend an extended vacation.

Francis J. Baker, president of the Geo. H. Tay Co., of San Francisco, was in Chicago this week on his return from a visit to Pittsburgh and other eastern points. Mr. Baker feels optimistically relative to the building outlook on the coast.

F. W. Zander, manager of Crane Co.'s branch at Buffalo, N. Y., was in Chicago this week, visiting the home offices of the company.

R. T. Parshall, who formerly covered the Northern Indiana and Southern Michigan territory for Weil Bros., of Chicago, has been transferred, and in future will cover Southern and Eastern Iowa.

E. A. Culbertson, vice-president, and W. M. Parlon, secretary-treasurer and manager, both of the Mountain States Supply Co., of Salt Lake City, Utah, were in Chicago this week and spoke enthusiastically about this year's business prospects in Salt Lake City and vicinity.

F. E. Swan, formerly manager of the New York office of the Kewanee Private Utilities Co., Kewanee, Ill., is now connected with the sales force of the Burnett-Larsh Sales Co., of New York City, a subsidiary of the Burnett-Larsh Mfg. Co., of Dayton, O.

W. P. Evans, special representative of the Standard Sanitary Mfg. Co., of Pittsburgh, Pa., has just received his honorable discharge as sergeant in the army and returned this week to his duties with the Chicago branch of the Standard company.

Victor J. Mahler has resigned as sales manager for the Central Brass Manufacturing Co., of Cleveland, O., to become vice-president of the Empire Brass Manufacturing Co., also of Cleveland, assuming the duties of the late W. P. Deutsch, whose death occurred some time ago.

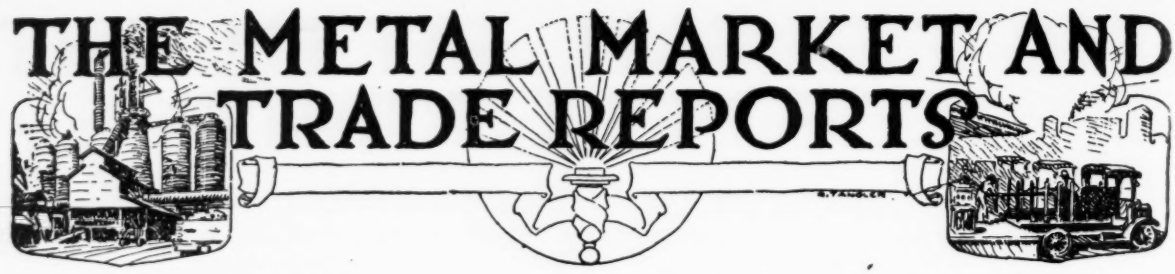
Corporal David Dawson Howe, son of Alfred F. Howe, of the Borden Co., Warren, O., was married on Monday, February 3rd. The bride was Miss Lucy Packard Loveless, also of Warren, O., and the wedding was held at the home of her parents. The happy couple are now on their honeymoon in the East.

A. S. Lindeblad, formerly with the Hoffman Specialty Co., of Chicago, has become associated with E. W. Sanborn, under the firm name of Sanborn & Lindeblad. The new firm will continue Mr. Sanborn's business as central western states representative for J. B. Wise, Inc., of Watertown, N. Y., the Detroit Range Boiler Co., and the Commonwealth Brass Corporation, both of Detroit, Mich.

E. W. Fisher has just opened the E. W. Fisher Service Bureau, at 2234 East Ninth Street, Cleveland, O. Mr. Fisher will place orders for plumbing or heating material with any jobbing house or manufacturer designated by his customers. His many friends in the trade are wishing him success in this new venture.

J. L. Stulsaft, of New York City, has just been appointed sales representative for the M. S. Little Manufacturing Co., of Hartford, Conn. Mr. Stulsaft makes his headquarters at 501 Fifth Avenue, and he will take care of New York City and vicinity for the above-mentioned company.

THE METAL MARKET AND TRADE REPORTS



Steel and Iron.

The general tone of the steel business is much better now because of the changes in ocean freight rates, which have been taking place during the past week. With the important reductions already operative, and with the prospect of further reductions as the case requires, there is every indication that the long-delayed boom in the export movement will become a reality. In this connection, it was noticed that the steel producers, through their decision to maintain present price levels on various grades, have created more interest on the part of domestic consumers, who have been playing a waiting game until the price level shows signs of receding, but by quashing the hope of the consumers for immediate reductions in prices, the producers have strengthened their position materially. They have strong reasons in support of the statement that there will be no further revision of prices for some time to come. Wages have not changed any and will not, as long as the cost of living remains high, and consumers realizing this, have taken a better attitude toward the market conditions, and a better demand by domestic consumers is expected to develop shortly. Reports of better demand for wire have placed this article in the van of the finished products group. In the wire group the demand for fence wire has been noticeable, and this is attributed to the approach of spring. The scrap market is doing little in the way of readjustment, and demand is being held back pending a more settled condition of affairs.

The pig iron situation is improved to some extent, and a more optimistic feeling is evident in local trade circles because the reduction in ocean freight rates has opened up our market to world trading. Just how soon this new phase of the situation will be improved is a matter of speculation, but the first steps have been taken not only by the British interests, but by our own shipping board. The two organizations are running a race, and as far as producers are concerned, they may go as far as they like, as long as rates are lowered to a point where competition with foreign interests is assured. Some inquiries by domestic interests came out last week, but the question of price is still holding back active buying. Tonnages for export have been appearing, but exact figures are lacking. There are still many furnaces out of blast and all signs point to reduced production during the winter months. Coke price control was discontinued last Saturday, and the advent of open market conditions is being watched with interest. The following prices are current on pig iron at tidewater:

No. 2X, Philadelphia	$34.25	to	$36.15
No. 2 Southern, Cincinnati	34.60	to	39.60
No. 2 Foundry, Chicago	31.50	to	34.00
Basic Valley Furnace	30.00	to	33.50
Bessemer, Pittsburgh	33.60	to	36.00

Copper.

The copper situation is about in the same condition as for some weeks past. The reduction by smaller producers of the price of the red metal last week resulted in no change as far as the buying was concerned. The ending of the war demand resulted in the piling up of considerable stocks of material, and at present the producers are strongly of the opinion that a curtailment of production is the only way to guard against a top-heavy market. All interests are playing a waiting game, and there are no indications at present that there will be any change in the attitude of the trade. The large producers are maintaining the price at 23 cents, but no metal has changed hands at that price, and some small lots have been sold at from 18¾ to 20 cents.

Tin.

There is but little to record regarding the tin market. As far as trading is concerned, it is a thing of the past, as there is no activity. Small lots are offered for sale, and in cases where there is need for a particular grade, there is some report of a sale, and prices are named, although nominal, which are as follows: Straights, 72.50 cents; Australian, pure, very scarce; American, pure, 69 cents; American, 99 per cent, 67 cents and Bolivian, 93 to 99 per cent pure, 58 to 60 cents.

Lead.

The outstanding feature of last week's lead market was the reduction in price announced by the American Smelting & Refining Co. Outside of this there is nothing to report. The price is 5.25 cents for New York and 4.95 cents for East St. Louis.

Spelter.

Demand for spelter remains light and consumers are not inquiring for any considerable quantities. Prices are nominal, with prompt delivery, New York, 6.95 cents and for East St. Louis 6.60 cents.

Other Metals.

Quotations on other metals in New York are as follows:

Aluminum (in 50-ton lots)	33 cents per lb.
Antimony, Chinese and Japanese	16 cents per lb.
Solder, No. 1	43 cents per lb

New York Old Metal Market.

The following prices are current for old metals:

	Buying.			Selling.	
Copper, heavy	14½	to 15	cents	16	cents
Copper, light	12½	to 13	cents	14	cents
Brass, heavy	8¾	to 9	cents	9½	cents
Brass, light	7¾	to 8	cents	9	cents
Brass turning	8	to 8½	cents	9	cents
Tea lead	3⅝	to 3¾	cents	4	cents
Lead, heavy	3½	to 4	cents	4½	cents

Chicago Old Metal Market.

Chicago wholesale dealers' prices are nominally as follows:

	Buying.			Selling.	
Heavy yellow brass	8½	to 9	cents	10	cents
Brass, light	7½	to 8	cents	9	cents
Brass, medium	7½	to 8	cents	9	cents
Red brass	15	to 15½	cents	16	cents
Cocks and faucets	11	to 11½	cents	12	cents

Copper, heavy	14½	to	15	cents	16 cents
Lead, heavy	4	to	4¼	cents	4½ cents
Tea lead	3½	to	3¾	cents	4 cents
Zinc	3½	to	4	cents	5 cents
Solder joints	12	to	13	cents	14 cents
Mixed babbitt	5½	to	6½	cents	7 cents
Old iron pipe, per ton		$14.00			$15.00

The Pipe Market.

Quotations on less than car lots of full weight steel pipe are as follows:

	Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.
⅛ to ⅜ inch	40	12	....	....
½ inch	44	28	....	....
¾ to 3 inch	47	32	....	....
2 inch	....	....	40	26
2½ to 6 inch	....	....	43	29
7 to 12 inch	....	....	40	25

The quotations apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong steel pipe in less than car lots, quotations are as follows:

	Extra Strong				Double Extra Strong			
	Plain Ends				Plain Ends			
	Butt Weld		Lap Weld		Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.
⅛, ¼ and ⅜ inch	31	6	....	....	....	....	....	....
½ inch	36	11	....	....	25	....	....	....
¾ to 1½ inch	40	15	....	....	28	....	....	....
2 to 2½ inch	41	16	....	....	30	....	....	....
3 inch	41	16	....	....	....	....	....	....
2 inch	....	....	33	8	....	....	23	....
2½ to 4 inch	....	....	36	11	....	....	25	....
4½ to 6 inch	....	....	35	10	....	....	24	....
7 to 8 inch	....	....	31	6	....	....	19	....
9 to 12 inch	....	....	26	16	....	....	....	....

With threads only, the basing discount is one and one-half points lower. With threads and couplings the basing discount is three points lower. The quotations apply to all quantities less than car lots.

Quotations on full weight genuine iron pipe, in less than car lots, are as follows:

	Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.
⅛ and ¼ inch	18	+11	....	....
⅜ inch	19	+10	....	....
½ inch	23	3	....	....
1¼ inch	28	10	11	+6
¾ and 1 inch	28	10	....	....
1½ inch	28	10	20	4
2 inch	....	....	21	5
2½ to 6 inch	....	....	23	8
7 to 12 inch	....	....	20	5

These quotations are f. o. b. Pittsburgh, and apply to all shipments from stock, regardless of quantity.

On extra strong and double extra strong genuine wrought iron pipe, with plain ends, and in less than car lots, the quotations are as follows:

	Extra Strong				Double Extra Strong			
	Butt Weld		Lap Weld		Butt Weld		Lap Weld	
	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.	Blk.	Galv.
⅛ to ⅜ inch	13	+12	....	....	....	....	....	....
½ inch	18	+ 7	....	....	3	....	....	....
¾ and 1 inch	24	+ 1	....	....	8	....	....	....
1¼ inch	24	+ 1	....	....	8	....	....	....
1½ inch	24	+ 1	....	....	8	....	....	....
2 inch	....	....	18	+ 7	....	....	3	....
2½ to 4 inch	....	....	20	+ 5	....	....	3	....
4½ to 6 inch	....	....	19	+ 6	....	....	5	....
7 to 8 inch	....	....	11	+14	....	....	....	....
9 to 12 inch	....	....	6	+19	....	....	....	....

These retail prices are f. o. b. Pittsburgh, and apply to all quantities except in car lots. With threads only, the basing discount is 1½ points lower. With threads and couplings, the basing discount is 3 points lower.

To ascertain the price in your city, deduct the proper less-than-carload freight rate from Pittsburgh to that city. Example: Base price on ¾-inch black steel pipe is 47 per cent, Pittsburgh, the less-than-carload rate to Patson is 17 cents, and the price, therefore, freight allowed to Patson, 45.3 per cent; on galvanized, 30.3 per cent. All other sizes to be figured on a comparative basis.

MINERAL RESOURCES OF GUATEMALA.

Walter C. Thurston, secretary of the American Legation, reports that lead deposits are fairly numerous in Guatemala, principally in the northwestern part of the republic, where there are deposits which undoubtedly will be of commercial value in the future. At present local demands for lead are being supplied by the Indians, who are working some of the deposits. There is also one small company mining lead, which employs a blast furnace.

This lead occurs in veins in the limestone, and also on the "lime serpentine contact." In general, the lead also carries low silver values, which is one reason why the deposits cannot be advantageously worked under present conditions.

Zinc is found in several places throughout the republic, but principally in the Department of Chiquimula, where it occurs in replacements in the "altered" limestone and likewise in contact veins. It is generally associated with lead and some copper.

During the early days of the war, at the time high prices were prevailing, high-grade calamine and zinc sulphite concentrates were exported from Guatemala in small quantities. Together with these were shipped some lead and silver concentrates, which were obtained as accessory minerals.

In other departments of the republic there are evidences of the exploitation of ore bodies containing zinc, and it is probable that lead and silver likewise were mined in these places.

Traces of copper are found in various sections of Guatemala, but there are no deposits of sufficient importance to warrant commercial development.

There are several deposits of good-grade iron in Guatemala, but at no place does it exist in bodies of sufficient importance to attract attention at present.

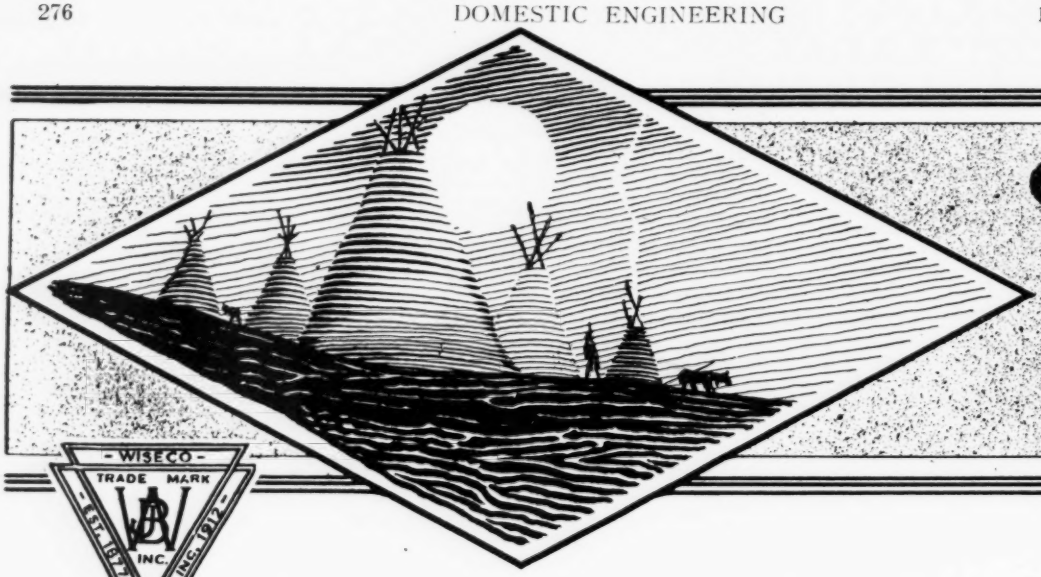
Chorme ore was first found in Guatemala about three years ago, and its exploitation begun, resulting in the development of a moderate mining industry in that line and the exportation to date of some 2,000 tons of high-grade ore, the greater part of which was shipped in 1918. The chrome field is said to be quite promising, inasmuch as high-grade deposits have been located in several distinct sections of the republic.

Limestone is found in great quantities throughout the republic. A silicious volcanic ash is frequently found with the limestone, which can be roasted with the lime for the manufacture of cement, resulting in a good-grade product.

Coal has been found in small quantities in several places in Guatemala, but in no locality as yet has it been exploited on a commercial scale. It has been stated, on good authority, that this coal may belong to the Carboniferous Age, and that it might be quite worthy of thorough investigation. Graphite also occurs in several places in Guatemala.

Brinkley, Ark.—Cooper Brothers Plumbing Co., of Brinkley, has purchased W. W. Weatherford's plumbing business in that city and is conducting it at the old stand.

Remember the Red Cross Fund.



WISECO
TRADE MARK
EST. 1877
INC.
INC. 1912

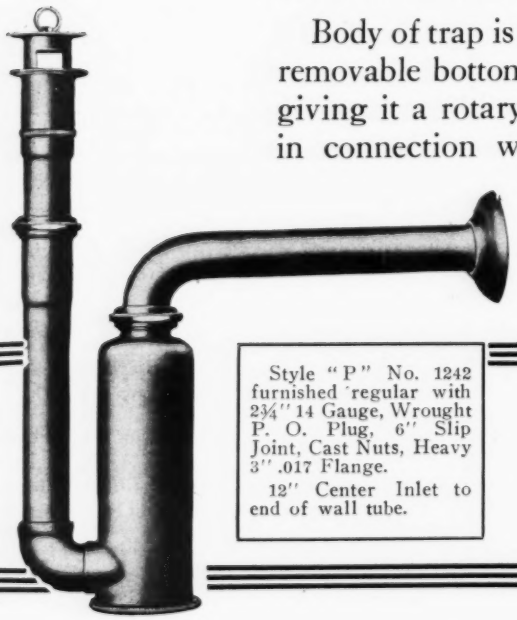
WISECO Plumbers' Sanitary Bra

merits, by Uncle Sam for use in c

endorsement is sufficient to recommend them
possible to secure better brass goods no ma

The SENECA is a plain, every-day, seamless lavatory trap, made of extra heavy drawn brass, smelted and rolled in our own mill, and finished perfectly smooth both inside and outside. It is especially designed and substantially built for enduring service.

Body of trap is 7 inches long, 2⅝ inches in diameter, with removable bottom. The water enters at one side of center, giving it a rotary or clean sweep motion. This principle, in connection with the smooth interior finish, prevents



Style "P" No. 1242 furnished regular with 2¾" 14 Gauge, Wrought P. O. Plug, 6" Slip Joint, Cast Nuts, Heavy 3" .017 Flange.

12" Center Inlet to end of wall tube.

J.B.WISE,

Manufacturers o

Lavat

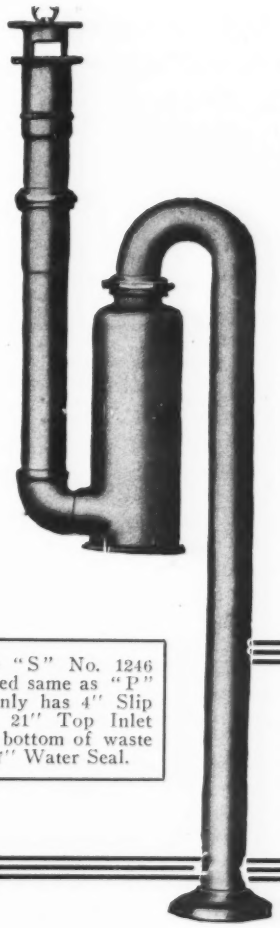
SENECA"

- WISECO - TRADE MARK - EST. 1877 - INC. 1912 -

Brass Products were selected on their
n cantonments and ship yards. This
them for use anywhere and everywhere. It is not
matter how much more you may pay for them.

lodging of dirt or other foreign matter in the trap. All tubing 1¼ in. diameter, uniform No. 18 gauge. Inlet 1¼ in. Ground seat on waste. Furnished in any size offset required, any gauge tubing, any length and any length slip joints.

Your jobber is a WISECO representative and can supply your needs in Plumbers' Sanitary Brass Goods—Traps, Waste and Overflows for Basins and Baths, Lavatory Trimmings, etc. Ask him.



Style "S" No. 1246 furnished same as "P" trap, only has 4" Slip Joint. 21" Top Inlet bend to bottom of waste tube. 7" Water Seal.

, Inc., Watertown, N.Y.

ers of Plumbers' Sanitary Brass Goods

tory Trap

AMONG THE PLUMBING AND HEATING CONTRACTORS

Illinois

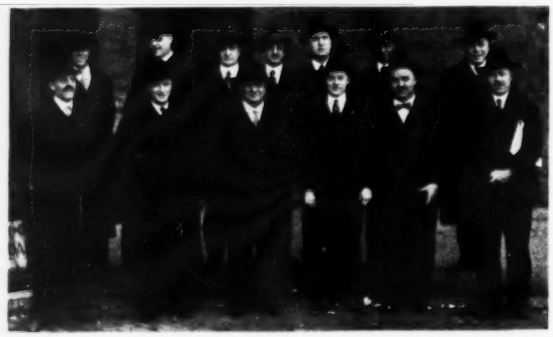
Chicago and Vicinity.

M. J. Downs, of 5538 Racine Avenue, has been awarded the contract for the installation of plumbing in two bungalows at 6336-6338 South Maplewood Avenue.

John Kleker, of 1720 West Forty-seventh Street, has been awarded the contract for the installation of plumbing in a real estate office at 4244 Archer Avenue.

L. Madura, of 2341 North Lorel Avenue, has been awarded the contract for installing modern plumbing in a cottage at 5819 Ainslie Street.

N. Rice, of 8714 Commercial Avenue, has been awarded the contract for the installation of plumbing in a new residence at 8340 Manistee Avenue.



Part of Chicago Delegation at the Danville Convention of the Illinois Master Plumbers' Association.—From "Domestic Engineering" Photo.

W. P. Hodges, of 2419 Lincoln Avenue, has received the contract for the installation of plumbing in a new residence at 2700 Talman Avenue.

W. E. McCarthy, of 4703 Addison Avenue, has been awarded the contract for the installation of plumbing in a cottage at 3445 North Keating Avenue.

W. J. Brady, of 1809 West Sixty-third Street, has been awarded the contract for the installation of plumbing in a cottage at 11328 Parnell Avenue.

J. I. Elliott, of 4823 Cottage Grove Avenue, has been awarded the contract for the installation of modern plumbing in a new residence at 5621 University Avenue.

J. J. Daly, of 408 North Wells Street, has been awarded the contracts for the installation of plumbing in a building at 3604 South Morgan Street and in bank at 112 West Thirty-fifth Street. The heating contracts were awarded to Geo. H. Kirk, of 6711 Wentworth Avenue.

Architect Walter Ahlschlager, of 111 West Washington Street, is preparing plans for a hotel and bath building, to be built at 410-416 South Wabash Avenue, to cost in the neighborhood of $1,750,000. He is also preparing plans for a residence on Tevfert Road, near Dempster, Niles Center, Ill.

Architect C. W. Christensen, of 343 South Dearborn Street, is preparing plans for an apartment hotel in Detroit, Mich., the estimated cost of which is $250,000.

Architects Henschien & McLaren, of 37 West Van Buren Street, have prepared plans for a packing plant at 911-931 West Thirty-seventh Place, to cost about $130,000.

Architect H. L. Newhouse, of 5000 Woodlawn Avenue, is preparing plans for a bank at 3158 West Twelfth Street, to cost about $125,000.

Architect William T. Branitsky, of 5 West Randolph Street, is preparing plans for a factory in Ravenswood. Estimated cost $100,000.

Architect Roy E. Pingrey, of 209 South La Salle Street, is preparing plans for a $100,000 office and manufacturing plant at the corner of Sixtieth and State Streets.

Architect A. G. Lund, of 810 West Sixty-third Street, is preparing plans for a garage to be built at Burnside.

Architect R. T. Newberry, of 108 South La Salle Street, is preparing plans for a factory to be built at 2733-2743 South Troy Street.

Architect Thos. R. Bishop, of 35 South Dearborn Street, is preparing plans for an apartment building at Sixty-sixth Street and Stony Island Avenue.

Architect G. G. Purcell, of 2938 West Monroe Street, is preparing plans for an apartment building at North St. Louis and Foster Avenues, to cost about $85,000.

Architect H. E. Stevens, of 53 West Jackson Boulevard, is preparing plans for a flat building at Monroe Street, near Forty-sixth Avenue.

Architect E. N. Braucher, of 6 North Clark Street, is preparing plans for a cottage on the Southwest Side, also for a bungalow in Berwyn, Ill.

Architect Chas. W. Kallal, of 1012 City Hall, is preparing plans for a garage at Thirty-first Street and California Avenue.

Architect M. A. Nelson, of 4521 North Troy Street, is

W. F. Knauss and Alvin W. Bahn, both of Chicago.—From "Domestic Engineering" Photo, taken at the Danville Convention of the Illinois Master Plumbers' Association.

preparing plans for an apartment building at Rockwell Street and Blaine Place, to cost about $75,000.

Architect D. S. Pentecost, of 4309 North Ashland Avenue, is preparing plans for a store and apartment building at Hamlin and Milwaukee Avenues. Estimated cost $55,000.

Architect W. C. Miller, of 416 West End Avenue, is preparing plans for a store at Twelfth Street and Ashland Avenue.

C. S. Somerville, of Decatur; Andy O'Neill, Dan O'Connor, and Wm. Crawley, all of Peoria; J. W. Ward, of Rock Island, and E. H. Donohue, plumbing inspector of Peoria.—From "Domestic Engineering" Photo, taken at the Danville Convention of the Illinois Master Plumbers' Association.

Missouri

St. Louis and Vicinity.

Hugo F. Urbauer, president and treasurer of the Urbauer-Atwood Heating Co., feels supremely confident that business will in general display a marked improvement before the year is much farther advanced. "We have been invited to bid on some big construction work in the East," said Mr. Urbauer. "I was surprised at the magnitude of these jobs. Eastern investors are going right ahead and showing unlimited confidence in the future of the United States. We ought to feel the same way about it in the Middle West. Many Western investors are still skeptical about prices of material and labor. They are inclined to be entirely too conservative. Prices are not going to take a big tumble. We cannot turn things upside down overnight. A sane and normal readjustment will come along conservative lines. The heating business will improve, as soon as speculative investors become satisfied that prices have reached a permanent basis. The Urbauer-Atwood company is highly optimistic over the future, and is preparing for a keen revival in building construction work of every character."

C. O. Smith, one of the largest contracting plumbers in St. Louis, is on a business trip to Texas. He looks for a tremendous increase in building construction in all the growing cities of the Southwest, and predicts that St. Louis will surely obtain its share of this work. Mr. Smith is taking a swing through Tulsa, Oklahoma City, Fort Worth, Dallas and other Southwestern towns that are expected to initiate building construction of a quantity and quality order, as soon as the spring weather arrives.

Jeremiah Sheehan is chairman of the organization committee of the great Irish meeting, to be held in St. Louis, February 9th, to express sympathy for Ireland's efforts to secure local self government. Mr. Sheehan believes that Ireland has earned the right of self determination. He has planned to bring Senator J. Hamilton Lewis of Illinois, Frank P. Walsh of New York, and other speakers of national reputation to St. Louis, to address the Coliseum meeting on February 9th.

Walter Klein, of the Elliott-Barry Engineering Co., predicts a healthy revival in all-around building construction, commencing in the spring. The Elliott-Barry Co. is finishing a large railroad job at Muskogee, Okla. This job involves the installation of heating apparatus under sixteen locomotive stalls, also heating equipment for the entire roundhouse. The Elliott-Barry Co. is renovating and reconstructing the heating equipment of St. Vincent's Asylum, one of the largest Catholic institutions in St. Louis. "We have been invited to submit bids on considerable new construction all over the West," said Mr. Klein. "Conditions are steadily improving."

J. A. McBride, a heating contractor, takes the same view of the situation as Mr. Klein. "Business could be better, and on the other hand it could be a whole lot worse. I could handle a whole lot more work, and I expect to get a whole lot more before 1919 is much older. We know the work is on the way. Necessary construction has been held up by the war. Now the decks are cleared for big business. The readjustment of prices will be gracefully accomplished. The law of supply and demand regulates all these things. I do not see any use of sitting around and croaking. My theory is to keep moving and seek business. I have aways had to rustle for business, and I expect to keep doing so as long as I am in the heating industry."

California

San Francisco and Vicinity.

As renewed activities along plumbing and other domestic engineering lines hinge so closely on the building material situation, business is correspondingly quiet at the present time. There is a distinct feeling of optimism, however, among members of the trade, which does much toward tiding them over the present trying period. While it will probably be several weeks yet before any great amount of building is actually under way, plans are nearing consummation, and when the time is ripe, no hesitancy is expected on the part of investors in going ahead with the work.

It is understood that the work on school buildings will be given close consideration here in view of the fact that federal authorities are letting no opportunity escape where they may impress capital and administrative bodies that now is the time to start building and take up whatever operations were postponed on account of the war. According to investigations and estimates of the Department of Labor, there will be very little decrease in prices during the next four or five years, and as the present prices involve an excess of only one per cent per capita, they urgently request that all delayed school construction be taken in hand at once.

According to A. S. Baldwin, of Baldwin & Howell, of this city, the demand for moderate priced homes in the Mission District is growing rapidly. He says that the Mission Terrace Co. is planning to erect a number of dwelling houses on its tract to take care of the requests for such. Architect H. C. Bauman has prepared plans for five bungalows, which form the first unit, and the company has let the contracts for their construction.

About $250,000 will be spent on the Maskey Building, San Francisco, and bids will be taken shortly. The equipment will include steam heat and hot water supply, etc.

New plumbing and electric wiring will be installed in the Seamen's Institute Building of San Francisco in the near future.

Turner Co. has been awarded the contract for plumbing, heating and wiring in the three-ward building of the Marine Hospital.

Plans are completed for the lodge building of the Olympic Club of this city, to be erected at Lakeside. Complete kitchen equipment will be installed, dressing rooms, showers and a sewage disposal plant.

Other Cities in the State.

Work will start at once on the new County Hospital, at Alameda. The first unit of the sanitarium, to cost approximately $548,000, is planned to be finished and ready for occupancy the first of next year. This unit provides for about 150 beds. The latest approved sanitary features will be installed in the buildings. The plan in its entirety represents an outlay of about $1,000,000, and will provide for the accommodation of 500 beds to be distributed through six ward buildings, besides one structure for administration, receiving department, clinical work and surgical services. Adjoining this building will be a service building containing kitchens, laundry, etc. Additional structures planned are sleeping quarters for employes, a nurses' home and an ambulance garage.

It is said that there are plans on foot for a million-dollar hotel for Bakersfield, and that H. J. Brant and George Hav are among those interested in the proposition.

George C. Davis, manager of the Oakland Labor Temple, has announced that the new Labor Temple and Workingmen's Hotel, at Oakland, will cost in the neighborhood of $700,000. It will probably be a ten-story structure, located on Broadway, between Seventeenth and Eighteenth Streets, with an arcade connecting with Franklin Street. The hotel will be built on the Franklin Street side, with steam heat, running water and other sanitary features. The Broadway entrance will be used for the labor temple, with gymnasium, shower baths, etc., on the upper story.

A one-story brick school house with twelve class rooms is to be erected on Seventh Street, Los Angeles. A heating plant, modern plumbing and ventilating systems will be features of the structure.

Plans for a municipal bath house on Lake Merritt, in Oakland, are being given consideration by the club women of the east bay region. Representatives of numerous women's organizations are advocating the improvements.

Plans have been started for a $75,000 hotel at Seventeenth and U Streets in Sacramento. Arthur A. Poirier, of Colusa, is interested in the deal.

Construction on the new White Hospital, Sacramento, postponed until now on account of the death of Dr. White some time ago, will commence immediately. The structure will be reared on the present site on the corner of Twenty-ninth and J Streets. The estimate of the cost is given as $200,000, with an additional $50,000 for equipment. The building will have four stories and a basement.

A $125,000 school bond election is to be held shortly in Bakersfield, for the new Lincoln School. A larger and more modern structure is to take the place of the present building.

J. F. Shepherd, of Stockton, submitted the lowest bid of $18,000 for the construction of a one-story hospital and a one-story doctor's residence to be erected at Tracy.

The Government will build a $40,000 addition to the Naval Air Station at San Diego.

St. Paul and Vicinity.

Lieutenant Walter J. Spriggs, son of Frank J. Spriggs, plumbing and heating contractor of St. Paul, arrived home recently from Camp Dodge, Iowa. His parents went to Camp Dodge and returned with him. Lieutenant Spriggs served with the Three Hundred and Thirty-eighth Field Artillery in France, arriving in the United States at Newport News. At Camp Dodge he was honorably discharged from the service.

An unusually mild January, together with a general quickening in all building activities, is reflected to some extent in an increase in the plumbing permits issued by the City of St. Paul, this increase following a decidedly quiet period around the holidays.

Recent permits for plumbing work include the following: To L. J. Rozycki for work on a two-story frame dwelling at 977 Selby Avenue. To B. E. Cardinal for work on the frame dwelling of J. Almquist, 1177 Dunlap Street. To George Regelsberger, frame dwelling of H. P. Neilsen, 509 Holly Avenue. To E. P. Kelleher, frame dwelling of O. J. Borglin, 1490 Earl Street. To Leo Peyer, frame dwelling of Ed. Hordosky, 1199 Edmund Street. To J. J. Bailey, frame dwelling of N. P. Westfall, 1436 Edgerton Street.

Indiana

Indianapolis and Vicinity.

The period of uncertainty, which for the first few weeks, following the signing of the armistice, was apparent not only to plumbing and heating contractors, but to most all other persons identified with the building trades in Indianapolis, is gradually giving way to a more optimistic feeling, according to those interested in future building. Announcement of three new building projects during the last few days, gives only a slight inkling of the activities that will follow in the next few weeks, according to reports in circulation at the present time.

The E. G. Spink Co. has just completed plans for the construction of a three-story apartment house on Park Avenue, north of Thirteenth Street, the estimated cost of the project, including the real estate, being $100,000. The structure is to contain thirty-two four-room apartments, modern in every detail. As the success of this enterprise, which purely is an investment project, depends upon the revenues to be derived from rentals, it reflects the confidence of the builders and owners in the future of the city.

Two other important announcements affecting large industrial concerns of the city also reveal the optimism of the owners as to the outlook for further industrial activity. The Indianapolis Drop Forging Co. is preparing to erect a large one-story annex to its plant in Madison Avenue, the cost of which is estimated at $25,000. The Eli Lilly Co., a large chemical manufacturing concern, has just acquired real estate adjoining its big plant in the south part of the city on which a new addition is to be erected.

That other new building enterprises of a speculative and investment nature are being projected is assured

by leading architects and contractors. They are almost as busy at this season of the year in preparing tentative plans and figuring cost estimates as in pre-war times. No definite announcement, however, can be made until prospective owners really become satisfied in their own minds that no further readjustments are to be made.

Harry Callon, Jr., of the plumbing and heating firm of Callon Bros., 24 South Alabama Street, asserts that the period for new building activity already is under way, pointing out that a comparison of the record of building permits for December would reveal an increase of 100 per cent over the corresponding month of 1917, and that the same rate of increase is being maintained during the first weeks of the new year. Mr. Callon says that, as in other years prior to the war, the extent of building operations will depend largely upon the material and labor costs. Most of the large building contractors apparently are unanimous in the belief that there will be little or no reduction in the price of labor, or at least no substantial reduction in the cost of living. The big increase in freight rates and the added cost of manufacturing building materials, it is explained, will militate against much of a cut in most lines of plumbing and heating supplies as well as practically all other building materials.

Vincennes and Vicinity.

The Buck & Boyd Co., of Vincennes, has the contract for installing the plumbing and vapor heating systems in the new First Methodist Church, now under construction. This firm also has the contract, amounting to $28,000, for installing the plumbing and heating in a township high school at Casey, Ill., work on which is now under way.

Gary and Vicinity.

The United Plumbing Co. has been awarded the contract for the installation of plumbing in 50 residences to be erected for the Gary Land Co.

The Kennedy Cox Co. has been awarded the plumbing contract on a church for the Orthodox Catholic Congregation, to be erected at Thirteenth and Monroe Streets, at an estimated cost of $30,000.

H. H. Highlands has been awarded the contracts for installing plumbing in twelve residences now being erected for Plew & Co.

Edward M. Pripps has been awarded contracts for installing plumbing in eight flat buildings and thirty-seven residences; also the heating and plumbing contract on a morgue and chapel building, to cost about $20,000.

Other Cities in the State.

The city of Kokomo is in need of 2,500 additional dwelling houses to provide shelter for families who are not able to find homes and a big influx of factory workers, which a huge program of industrial expansion is expected to bring to the city during the summer months, according to figures announced at a recent meeting of the Chamber of Commerce. The meeting was held for the purpose of discussing plans for one of the largest home-building campaigns the city has ever known.

A. C. Sandberg, of Lafayette, has been awarded the contract for making alterations in the plumbing and heating systems in the Tippecanoe county jail. The contract calls for the improvement of the sanitary conditions of the cells.

Sherman Reich, head of the Elkhart City Plumbing & Heating Co., at Elkhart, has announced that the firm has been incorporated under the laws of Indiana with a capitalization of $25,000 and will be known as the Reich Heating & Engineering Co.

Georgia

Atlanta and Vicinity.

The Englehardt Co. has been awarded the contract for installing a heating plant in a residence at 420 West Peachtree Street.

J. H. Jennings, of Jennings-Graham Co., who has been confined to his home for several months, is out again and says he feels like he could take on Jack Johnson or J. J. Jeffries, or a $100,000 contract. "The bigger the better," he says, and he looks the part, too.

The Farrell Heating & Plumbing Co. has the contract for installing a heating plant in the Agricultural School at Valdosta.

Sam Barber has the contract for installing plumbing in a flat building being built at 371 South Pryor Street.

Jack and Mack McAuliff, sons of Jas. McAuliff, of the Farrell Heating & Plumbing Co., of Atlanta, disappeared January 16th and could not be found anywhere, and both parents thought they had been kidnapped. Their disappearance remained a mystery until their bodies were uncovered by a gas man, who was under the house looking for a leak. It seems they had been playing soldier, and were engaged in digging trenches in the soft earth, and had gone so far into the bank that the overhead bank caved in on them.

Pennsylvania

Pittsburgh and Vicinity.

According to the figures compiled in the office of Harry Minnemeyer, Jr., chief clerk of the Bureau of Building Inspection, permits issued for the month of January show a total of 65 new buildings to cost about $120,582. There were also five addition permits for work to cost $54,790 and 59 alteration and repair permits representing $106,199, making a grand total of 129 permits and $281,571 for the month. This compares with 85 permits for January a year ago and $314,450 in costs. New permits were not numerous last week, but there were a few indicating slowly reviving interest in building.

Plans will soon be announced for equipping the new "gym" of the East Liberty Y. W. C. A. with a complete shower bath system and all modern appliances. This was made certain recently, when an appreciative friend of the organization called the president on the phone and requested the privilege of assuming the expense. Arrangements are now under way for starting the work, which will be one of the most important jobs in the near future.

The purchase of a $12,000 site for a new bakery building on the South Side, which was recently announced by a local realty broker for the Simon, Caplan, Glantz Co., gives promise of an early bit of construction work in which local crafts are actively interested. The site has a frontage of 96 feet in the main thoroughfare and extends to a depth of 120 feet along South Twenty-third Street. It is understood that the buyers have plans already prepared for a modern baking establishment to occupy the entire lot.

According to the monthly report just issued by Chairman D. C. Wills, of the Fourth Federal Reserve Bank district, building operations in the district are not going forward rapidly, although encouragement is derived from reports showing that there is a slight increase in the number of building permits issued and the value of operations authorized by them. The permits for dwelling houses to be erected show a decided increase particularly in the more rural and suburban sections.

Philadelphia and Vicinity.

D. F. Durkin, of 1613 Pine Street, has been awarded the contract for installation of plumbing in the new Catholic Service Club, which is being erected at 1019 Market Street, for the estate of S. Sternberger. Consideration $2,500.

W. H. Zimmerman, of Philadelphia, has been awarded the plumbing contract on the residence of Dr. Jos. Krauskopf, which was recently destroyed by fire.

J. J. Yoder, of Sunbury, has been awarded the contract to install plumbing in some stores and apartments, which will be erected in that town, for C. C. Seebold.

J. D. Scott, of Coatesville, is building for himself a new $12,000 apartment house with plumbing shop on the first floor. Mr. Scott also has the contract to install plumbing and heating in a new church, which is being erected for St. Mary's Greek Catholic Congregation.

J. Dankelman, of Chester, has the contract to install plumbing in a new residence and garage for E. R. Mondy, in that city.

R. J. Hoben, of Twenty-first Street and DeLancey Place, has been awarded the contract to install plumbing in the office of the Baldwin Locomotive Works.

D. W. Young, of Twenty-first and Brandywine Streets, has the contract to underdrain a row of houses on Hamilton Street, for the Bair Estate.

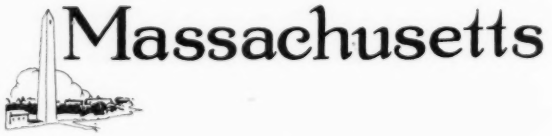
Philadelphia Master Plumbers' Ball and Banquet.

The Philadelphia Master Plumbers' Association held its annual Ladies' Night, Wednesday, January 29th, at Scottish Rites Hall. The affair this year was termed "Victory" night, and the hall was beautifully decorated with flags of our allies as well as with the Stars and Stripes. D. F. Durkin, president of the Philadelphia Master Plumbers' Association, presided, and during the evening presented E. F. Roberts, formerly president for eleven years, with a beautiful grandfather's clock. Frank B. Lasette, vice-president of the National Association of Master Plumbers, delivered an interesting speech, as did Rev. Thomas F. Wilson, whose speech is one that is always looked forward to, at these affairs. Prizes were given to the oldest married couple and the youngest married couple, as well as the oldest bachelor and maid in the room. Dancing concluded the affair, which was voted as the most successful one ever held by the organization.

Frank B. Lasette, vice-president of the National Association of Master Plumbers; Jeremiah L. Murphy, president of the Greater New York Association; John Hopkins, representing the National Sanitary Association; William A. Bradford, of Quincy, former president of Massachusetts State Association; Plumbing Inspector Walker, of Waterbury, and several others prominent in plumbing circles were among the two hundred or more persons who attended a public hearing at Bridgeport, Conn., on Thursday evening, January 23rd, to discuss alleged violations of the Bridgeport Plumbing ordinances by the United States Housing Corporation, which is building a number of dwellings in that city. The situation was similar to that which recently developed at Quincy, Mass., the local officials making no objection to minor infractions of the local regulations so long as the war lasted but believe now that the war is over and the work is to be largely of a permanent nature, that even the government agencies should be required to comply with all proper regulations. Mr. Bradford explained the action taken by Quincy officials and the visit of himself as a member of the board of aldermen and other city officials to Washington, where their contention was upheld and orders issued for local regulations to be obeyed. The principal difference in the standards, as adopted by the housing corporation as compared with the local standard, has to do with the installation of vents in closets, the local ordinances requiring these while the corporation has been using non-siphoning traps instead. H. J. Luff, of Cleveland, advocated the system being tried out by the housing corporation. The committee appointed by the mayor to investigate the matter, consisted of Alderman Charles W. Freeman, who is a plumber; Building Inspector Daniel M. Rowland and Assistant Inspectors Bernard J. McKelvey and Andrew P. Owens.

Robert L. Hannon, manager of the Bethel branch of Danbury plumbing firm of F. A. Hull & Son, reports a number of good contracts obtained since the opening of the branch store a few weeks ago.

James Rourick, who conducts a plumbing establishment at 321 East Washington Street, Bridgeport, reported to the police recently that his place of business had been entered and a large quantity of solder and other materials carried away.



Boston and Vicinity.

The recent annual meeting and dinner of the Master Plumbers' Association of Boston and Vicinity was so successful from a social and educational point of view, that plans are being considered for another big dinner meeting on the second Tuesday in February, the next meeting night. The educational committee, of which John W. Zehringer is chairman, is making plans for the meeting. The regular business meeting of the association was held at the rooms on State Street, on Tuesday evening, January 28, and many matters of business were discussed.

William B. McAree, recently elected president of the Haverhill Master Plumbers' Association for a fifth term, was presented, at the January meeting of the association, with a handsome leather traveling bag and a $50 Liberty Bond, on behalf of his fellow members. The presentation speech was made by Fred Mills, of the firm of Mills & McClintock, who drew attention to Mr. McAree's long and faithful service in the association. In replying, President McAree expressed his surprise at the receipt of the gift, and gave assurance of his appreciation of it and of the good friendship which it betokened. The meeting, which was held on the evening of January 24th, was in the nature of a housewarming, being held in the newly equipped rooms of the

association at 8 Main Street. The evening's program was in charge of a special educational and entertainment committee, consisting of C. A. Anderson, Albert Dugdale and Clarence M. Neilly. Not the least interesting feature to the twenty-three members and guests present was an elaborate supper. The guests included State President Daniel F. Carroll, of Lowell, and Inspector of Plumbing Dennis X. Coakley, of Haverhill. President Carroll gave an interesting talk on present-day conditions in the trade. He also discussed the figuring of true costs, contract work and what constituted a legitimate profit, and ended up by urging everyone present to attend the coming state convention. Inspector Coakley spoke on proposed changes in local plumbing regulations, especially the sections pertaining to local venting of closets, which are to be made mandatory. The Haverhill association plans to have a meeting of a similar nature each month, and those, who attended the January meeting, all expressed their intention to be on deck next time.

The Heating and Plumbing Contractors' Boston Association, Incorporated, held a "Get-together" evening at Young's Hotel, Boston, on Wednesday, January 29th. About thirty-five members were gathered about the dinner tables when President Frank A. Merrill gave the word for the first course to be brought on at 6:30 o'clock, and from then until late in the evening there was one round of pleasure and good fellowship. The dinner itself was a production of high order, and between courses Lieutenant Ralph Brown, song director of the Northeast Army Department, showed members how the boys in the camps and at the front sing the army songs. After a few tries, he got everyone into the spirit of the thing, and all joined lustily in the choruses. After the dinner and while awaiting the arrival of Harry A. Maxwell, a Y. M. C. A. worker recently back from the front, who was a speaker, the company was entertained with feats of magic, singing, music and monologues by professional entertainers. Mr. Maxwell, who is general secretary of the Y. M. C. A. at Malden, gave an interesting talk on "The Marines at Chateau Thierry," consisting of some of the experiences of these American boys, who turned the tide of battle and stayed the onrush of the Germans toward Paris.

Daniel L. Hanson, of Boston, addressed the members of the Massachusetts North Shore Association of Master Plumbers at its meeting on February 7th on the subject of "Salesmanship Among Master Plumbers."

Other Cities in the State.

John J. Casey has opened a plumbing and heating establishment at the corner of Wharf and Water Streets, Gloucester.

The W. A. Bradford Co., of Quincy, has been awarded the contract for installing a new heating plant in the Second Ward Fire Station in Quincy. The contract amounts to $921.

Charles J. O'Brien, inspector of plumbing at Chicopee, in his annual report just made public, declares the city to be free from unsanitary plumbing largely because of the co-operation of property owners with his department. The Chicopee Manufacturing Co., which owns a number of tenements at Chicopee Falls, occupied by employes of its plant, has modernized all of its houses, installing new and up-to-date plumbing fixtures.

Erection of public convenience stations at all public parks in Malden was advocated in an order passed by the Malden common council recently. The order called upon the park commission to procure estimates of the cost of providing locker buildings and comfort stations for all parks, which are not now so equipped.

New York

New York City and Vicinity.

With the ending of the war the Manhattan branch of the New York City Association of Master Plumbers will again take up the usual program of seasonable entertainment, which was suspended during the war period. While it is not probable that the annual ball, which is usually the big event of the winter season, will be held, a committee of entertainment has been appointed to arrange for a series of social events. The first attempt will undoubtedly be a beef-steak party, to be held in the near future. This committee is composed of the following gentlemen: Harry Hemlin, chairman; I. J. Brown, David Deigan, Andrew J. Davis, Morris Jarcho, Frank B. Lasette, J. L. Murphy, Richard Tretler, John P. Blair, and William J. Conklin.

The jobbing committee of the Brooklyn branch association, of which M. J. McGrath is chairman, and whose purpose it is to further the interests of members who do jobbing work, submitted a detailed report of its activities at a recent meeting of the association. The committee was complimented upon its good work, especially upon the results attained in the collection of bad accounts. According to the report of M. J. Hayden, chairman of the sub-committee on collections, out of a total of $759.29 in claims, submitted to the committee since July 1st, $660.50 has been collected. The balance of the claims, upon which detailed reports were presented by Mr. Hayden, are still before the committee. The fact that over eighty-five per cent of the total of claims submitted had been collected was highly gratifying to the members. The results will of course show a still higher percentage of collections, when final report on the total amount is made. The report was hailed with enthusiasm by the members, and reflects the highly efficient and business-like methods employed by the jobbing committee in all its work. Another branch of the committee's work, which proved interesting, was its efforts toward the establishment of comprehensive and efficient cost-accounting and charging methods. The matter has been discussed at length at the several meetings of the committee, with the result that a sub-committee on education has been appointed to collect data and formulate plans for the dissemination of practical ideas on this problem. This committee is composed of Charles Kober, M. J. Hayden and G. F. Tracy.

C. Schmidt, of 409 East Fifth Street, New York City, has been awarded the contract for installing plumbing in a $25,000 storage plant located in Brooklyn, N. Y.

New Jersey

Newark and Vicinity.

The Newark Association of Master Plumbers has announced that final arrangements for the annual banquet and ladies' night have been completed. Achtel-Stetters on Broad Street, will again cater to the requirements of the occasion, as they have done in such an excellent manner on many former occasions. The date is Thursday, February 20th. The committee in charge has a "go-the-limit" order, and the members and guests of the association are looking forward to the enjoyment of another

of those pleasant evenings for which the Newarkers are famous. The program includes: A delicious banquet, entertainment, in variety and dancing till you tire. The committee consists of: S. F. Wilson, chairman; F. J. Sturn, treasurer; Andrew Taaffe, George Snyder, Wm. Spatcher, E. Sternkopf and M. J. Brady, ex-officio.

Otto Meinert has just been honored by re-appointment for the thirteenth time as plumbing inspector in Davenport. This city is at the present time in the midst of a building boom, owing to the fact that the Government is erecting 375 houses there, and the installation of plumbing in these structures will be in accordance with the plumbing ordinance of Davenport. That the Government finally decided to comply with the local ordinances in this case was no doubt due to the efforts of Mr. Meinert.

Entire Des Moines Delegation at the Iowa Master Plumbers' Convention, at Cedar Rapids, Ia. Teddy Shea, the newly elected state director, is on the right end and nearly out of the picture. —From "Domestic Engineering" Photo.

February 11, 12 and 13, 1919.—The annual convention of the Ohio Master Plumbers' Association, at Youngstown, Ohio, with headquarters at the Ohio Hotel.

February 12, 1919.—The winter meeting of the Eastern Supply Association, at the Hotel Astor, New York City.

February 19, 1919.—The regular winter meeting of the Central Supply Association, at the Congress Hotel, Chicago.

February 20, 1919.—Special meeting of the Trade Extension Committee, at the Congress Hotel, Chicago.

February 20, 21 and 22, 1919.—The twenty-second annual convention of the Montana Master Plumbers' Association at Great Falls, Mont.

March 10, 11 and 12, 1919.—The annual convention of the Indiana Society of Sanitary Engineers, at Terre Haute, Ind.

March 10 and 11, 1919.—The annual convention of the Missouri State Association of Master Plumbers, at Hannibal, Mo., with headquarters at the Mark Twain Hotel.

March 11-12, 1919.—The annual convention of the New York State Master Plumbers' Association, at Buffalo, N. Y.

March 18, 19 and 20, 1919.—The annual convention of the Michigan State Association of Master Plumbers, at Lansing, Mich.

May 5, 6 and 7, 1919.—The annual convention of the Texas Master Plumbers' Association, at San Antonio, Texas.

THE ANNUAL MEETING OF THE NEW ENGLAND ASSOCIATION OF PLUMBING INSPECTORS.

Thirty-five inspectors of plumbing, representing cities and towns in many sections of New England, were present at the annual dinner and election of officers of the New England Association of Plumbing Inspectors, held at the Quincy House, Boston, on Wednesday afternoon, January 29th. Many matters of interest to inspectors were discussed formally and informally, before the dinner was served, between courses, and after the good things had been cleared away and clouds of tobacco smoke began to curl upwards in the dining room. Of particular interest to the members is the question of uniform inspection laws, and this was taken up in the executive session and discussed at length. There were also expressions of opinion as to different kinds of traps and other fixtures.

The members did not forget one of their number, Inspector Leslie Morrison, of Medford, who is in overseas service with the Y. M. C. A., and, on motion of Andrew J. Burnett, the secretary was instructed to write him, conveying the good wishes of his fellow members.

It was the sentiment of the meeting that the midsummer outing should be held at Worcester, memories of a good time and an excellent dinner there on a previous occasion still lingering in the minds of many. The Ways and Means Committee, which has charge of arrangements for the meetings, probably will decide upon Worcester, it was stated.

Officers of the association were elected for the ensuing year, as follows:

President, Jeremiah J. Kenily, of Quincy; vice-presidents, Ernest G. Bates, of Springfield, J. R. Walker, of Waterbury, Conn., Charles A. White, of Boston, C. J. Smith, of Portland, Me.; secretary, O. J. Cullington, of Lawrence; treasurer, J. J. Mulloney, of Boston; chairman of ways and means committee, Andrew J. Burnett, of Melrose; chairman of legislative committee, Thomas M. Wilson, of Boston; chairman of scientific committee, F. W. Tower, of Springfield.

THRIFTOGRAMS BY ABRAHAM LINCOLN.

Keep pegging away.

Answer with facts, not arguments.

Get ready and the chance will come.

We all like the man who "sticks through thick and thin."

The value of life is to improve one's condition.

Nothing is so local as not to be of some general benefit.

May the vast future not have to lament that you neglected it.

Shall he who cannot do much be for that reason excused if he do nothing?

The hired laborer of yesterday labors on his own account today and will hire others to labor for him tomorrow.

Teach economy, that is one of the first and highest virtues. It begins with saving money.

Follow Lincoln's advice. You have the opportunity. All he says here applies to you now. Buy War Savings Stamps and Thrift Stamps.

ILLINOIS MASTER PLUMBERS IN SUCCESSFUL CONVENTION

(Continued from Page 270.)

Thursday Morning.

The morning session opened with the reading of reports of the various committees, at the close of which, C. V. Kellogg, president of the Kellogg-Mackay Co., of Chicago, delivered an instructive address.

Delegation from East Side Master Fitters' Association, composed of master plumbers and fitters from Alton, Granite City, East St. Louis and towns in that vicinity.—From "Domestic Engineering" Photo.

C. V. Kellogg on "The Readjustment Period."

"The Reconstruction Period" was the subject assigned to Mr. Kellogg, but he started by saying that he felt unable to discuss that subject, and preferred to talk on "Readjustment." He spoke of the great work and effort American energy put into the winning of the war, and how little thought had been given to the period we are now passing

The Delegation from Champaign.—From "Domestic Engineering" Photo.

through, until after the signing of the armistice. He said that the greatest question of today is: "When Will Business Pick Up, and When and How Will We Act for the Business Future?" After reviewing conditions of today, as he saw them, and telling of the great work, taken up by the Chamber of Commerce of the United States, he spoke very optimistically of the outlook for American industry. He dwelt at length on costs of production and said he could see no reason for prices in building material to drop, as the cost of raw material and labor has not decreased. He advised the members to stop looking for lower prices, and forget to talk lower prices to prospective customers, as he did not see how the present price can possibly be cut, and a profit made, and he added that no one has ever yet and never will do business on a declining market, and if you talk lower

Will L. Shaw, of Pontiac; W. A. Schmoeger, of Peru, and J. A. Huggins, of Streator, Ill.—From "Domestic Engineering" Photo.

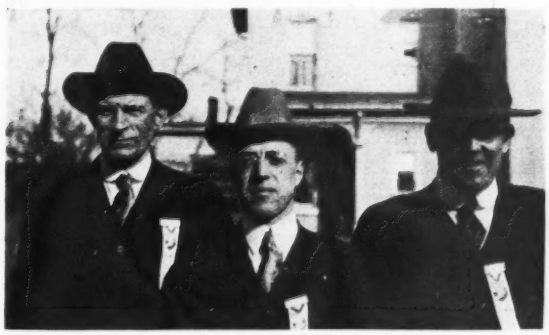
prices, people, who would otherwise build now, will wait for lower prices.

He spoke of the benefits the war had brought the United States in bringing into closer co-operation the different business interests. He said that the United States Government recognized the necessity of co-operation, and that it realized that co-operation was the one great thing that won the world war.

In closing, Mr. Kellogg advised the delegates to co-operate and work together, to the end that their business will be conducted on a profitable basis, and they will have a profit for themselves.

C. J. Boyd on the "Labor Situation."

At the close of Mr. Kellogg's address, C. J. Boyd, of Chicago, made some very interesting remarks on the labor situation, as he viewed it as General Superintendent of the Chi-



J. L. Jauncey, of Shelbyville; G. A. Zerliest, of Onarga, and A. W. Murray, of Hoopeston, Ill.—From "Domestic Engineering" Photo.

cago office of the Department of Labor of the State of Illinois.

Wednesday Afternoon.

The afternoon session was given over to educational talks, and the election of officers. A. W. Severns, a credit man

from the Champaign association, explained the system that the Champaign Master Plumbers are using. Attorney Jas. T. Haviland, of Aurora, spoke on the value of "Uniform Contracts," and G. P. Irwin on "The Value of Publicity."

The Bloomington Delegation at the Danville Convention of the Illinois Master Plumbers' Association.

Election of Officers.

The election of officers proved that the convention was unanimous in its opinion that the officers for the past year had done loyal and efficient work, and they were all honored by being re-elected for another term, as follows:

President, C. D. Brownell, of Champaign.

First Vice-President, E. J. Benning, Chicago.

Second Vice-President, Wm. J. Johnston, Bloomington.

Treasurer, E. J. Ryan, Danville.

Two delegations, those from Ottawa and Rockford, invited the association to hold its 1920 convention in their cities, and it was decided to leave the matter of selecting the location to the board of directors.

Matt Dwyer, of the Illinois Plumbers' Specialty Co., Chicago. Geo. J. Dehn and Geo. B. Barron, both of the Compound Injector & Specialty Co., Chicago, and John C. Jamieson of the Geo. J. Roberts Co., Dayton, O.—From "Domestic Engineering" Photo.

The Danville association was accorded a unanimous vote of thanks for the manner in which its members handled the convention, and the whole-hearted way in which they treated and entertained their visitors.

The convention thereupon adjourned *sine die*.

Exhibitors at the Convention.

The following concerns had exhibits at the convention and were represented as indicated:

H. P. Martin & Sons, Owensboro, Ky., represented by Sy Martin.

The Geo. J. Roberts Co., Dayton, O., represented by John C. Jamieson.

Compound Injector & Specialty Co., Chicago, represented by Geo. J. Dehn and Geo. B. Barron.

H. S. Ashmun, of Greenfield Tap & Die Corporation, Greenfield, Mass.; J. D. Blake, of Blake Specialty Co., Rock Island, Ill., and B. A. Hungerford, of Pittsburgh Water Heater Co., Pittsburgh, Pa.—From "Domestic Engineering" Photo.

Illinois Plumbers' Specialty Co., Chicago, represented by Matt. Dwyer and Mon T. Whitney.

The Burnett-Larsh Mfg. Co., Dayton, O., represented by F. B. Kurtz and J. F. Dare.

The Hotstream Heater Co., of Cleveland, O., represented by L. R. Mendelson.

Buffalo Specialty Co., Buffalo, N. Y., represented by Chas. M. Perrott.

Blake Specialty Co., Rock Island, Ill., represented by John D. Blake.

Lumberman's Mutual Casualty Co., Chicago, represented by C. S. Somerville.

Inland Supply Co., of Danville, Ill., represented by W. W. Weaver and H. C. Yelton.

Greenfield Tap & Die Corporation, of Greenfield, Mass., represented by Harry S. Ashmun.

J. F. Dare, of Burnett-Larsh Mfg. Co., Dayton, Sy. Martin, of H. P. Martin & Sons Co., Owenboro, Ky.; F. B. Kurtz, Chicago manager of Burnett-Larsh Mfg. Co.; C. M. Perrott, of Buffalo Specialty Co., Buffalo; and L. R. Mendelson, of Hotstream Heater Co., Cleveland.—From "Domestic Engineering" Photo.

Supply Men in Attendance.

Among the supply men present were the following:

C. V. Kellogg, of the Kellogg-Mackay Co., Chicago.

T. E. O'Brien and C. B. Irish, both of Leader Iron Works, Decatur, Ill.

B. A. Hungerford, of the Pittsburg Water Heater Co., Pittsburgh, Pa.

E. F. Geisz, of the Thatcher Furnace Co., Chicago.

Geo. G. Gebhart, of Vaile-Kimes Co., Dayton, O.

Dave Murphy, of the Utica Heater Co., Utica, N. Y.

SILVER ANNIVERSARY MEETING OF THE AMERICAN SOCIETY OF HEATING AND VENTILATING ENGINEERS.

(Continued from Page 266.)

reports in presenting an outline of the work of the Weather Bureau Committee of the Philadelphia Chapter. His chapter, he said, found it advisable to take up this matter and attempt to secure the publication by the bureau of comprehensive humidity readings, that would be of value to manufacturers in the city as well as to shipping. He suggested similar action by the society, and as a result a provision for the appointment of a committee of five for the purpose of securing a standardization of reports by the United States Weather Bureau, was passed. Simultaneous readings of temperature and humidity during the day are desired.

In view of the need for data on automatic ventilator capacities, a provision was carried for the appointment ot a committee of five to handle this subject.

A letter from Prof. Willard, of the University of Illinois, inviting the society to view the research work going on there in conjunction with the proposed work of the society's bureau, was read.

Before retiring from office President Still again emphasized his appreciation of the unselfish impersonal feeling displayed on all hands by the members during his administration, and a general round of thanks from him embraced the membership for the good attendance and enthusiastic support, the local members for the entertainment of their visitors and the authors of papers for those presented.

The installation of the newly elected officers ensued, and adjournment was taken at 5:30 oclock, following the election of the following committee to carry on the work of the Research Bureau: J. I. Lyle, chairman; H. M. Hart, Prof. J. D. Hoffman, W. F. McDonald, Perry West; the foregoing to serve for three years.. Homer Addams, Dr. E. Vernon Hill, Fred R. Still, A. S. Kellogg and J. B. McCall to serve for two years. Bert C. Davis, A. T. Lewis, C. E. Bennett, S. E. Dibble and George W. Martin to serve for one year.

President W. S. Timmis at the close of the meeting announced the following committee appointments:

Executive Committee:—Frederick R. Still, chairman; Homer Addams, Robt. W. Pryor, Jr.

Publication Committee:—Champlain L. Riley, chairman; E. Vernon Hill, Frank G. Phegley.

Finance Committee:—Homer Addams, chairman; E. Vernon Hill, Harry E. Gerrish.

Membership Committee:—Howard H. Fielding, chairman; Geo. B. Nichols, Frederick W. Powers.

Committee on Code for Testing Low Pressure Heating Boilers:—Homer Addams, chairman; John R. Allen, L. P. Breckenridge, Ralph Collamore, W. L. Fleisher, Jas. F. McIntire, J. J. Blackmore, Wm. H. Driscoll, L. A. Harding, Edwin A. May, Percy H. Seward.

Committee on Schoolhouse Standards:—Frank I. Cooper, chairman; John D. Cassell, Frank G. McCann, Robt. J. Mayer, John Howatt.

Committee on Standard Method for Testing Air Washers:—E. H. Vitalius, chairman; A. E. Stacey, Jr.; F. R. Ellis, H. A. Hart, E. Vernon Hill, H. A. Terrell

Committee to Confer with National District Heating Association:—Wm. H. Driscoll, chairman; A. S. Armagnac, C. W. Obert, G. W. Martin.

Committee to Co-operate with United States Navy Department:—Walter S. Timmis, chairman; Willis H. Carrier,

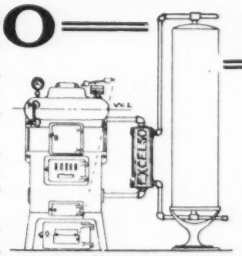
EXCELSO WATER HEATER

A radical departure from the ordinary methods of supplying domestic hot water.

No coils to obstruct fire pot. Highly efficient. Extremely economical.

Consists of a single casting made in one piece with two separate chambers. Water circulating through outer chamber is heated by steam or boiling water in inner chamber.

Three sizes for use below water line—tank capacities, 40, 70 and 100 gals. Heats storage tanks up to 800 gals. by use of live steam.



Showing Heater Connected to a Vertical Type Boiler.

Easily connected either in vertical or horizontal position to any boiler, new or old.

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1377 MAIN STREET BUFFALO, NEW YORK

Use Only the
ORIGINAL
Double Drainage Drains

The Standard of America

Look for "JOSAM" on Every Drain

Made by

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EASTERN BRANCH: 7 W. 45th St., NEW YORK
Pacific Coast Branch:
1002-4 Merchants Nat. Bank Bldg., San Francisco, Cal.

Dole PACKLESS GRADUATED RADIATOR VALVE

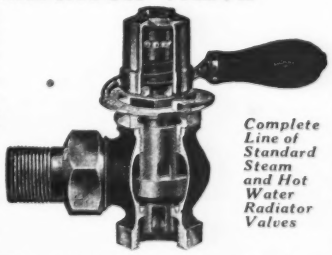
Embodies **a new** and **exclusive** DOLE principle by which you can have every degree of opening required in vacuum or vapor steam heating.

This Adjustment is easily made while the steam is on.

Nothing like it on the market.

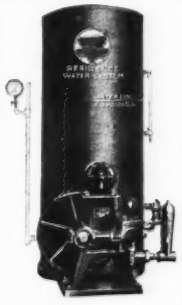
Furnished with the DOLE **without extra cost.**

Write for new circulars.



Complete Line of Standard Steam and Hot Water Radiator Valves

THE DOLE VALVE CO. 208 No. Wells St. Chicago



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Thousands of home owners all over this country want

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Residence Water Systems—they've got the money to pay for them and are just waiting for you to sell them.

That's Your Job

Write or wire for nearest representative.

Makers of "DURO" Guaranteed Residence Water Systems.

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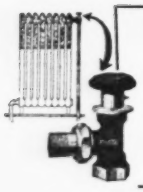

Fuel Economy Positive control of heat. Saves 20% to 30% fuel cost.

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Atmospheric System of Steam or Vapor with ADSCO" Regulator Valve. Write for Bulletin 133E.

Ask for Catalog of "ADSCO" Specialties

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General Offices and Works: No. Tonawanda, N. Y.
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The Hotstream WATER HEATER

Kerosene Water Heater

Here is a REAL Kerosene heater. Heats as HOT and FAST as a gas heater. Patented wickless burner generates its own gas, and throws a clean, powerful, odorless flame. Will run over 12 hours on a gallon. Send for catalog and folder.

THE HOTSTREAM HEATER CO., 1375 E. 17th St., Cleveland, O.

"Makers of Heaters That Heat" Noiseless blue flame—like gas.

BETHALTO WATER SYSTEMS

Answer every need of Kitchen, Dairy, Garden and Farm. They furnish running water, clear, cold and plentiful, fresh from the bottom of your well or cistern.

Dealers and Plumbers handling BETHALTO control the business in their territory. Write for literature and proposition.

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High Grade Sanitary Ware

OUR sanitary ware is manufactured by the modern "casting" process, which insures a uniformity of structure that makes for great strength and absence of flaws. Materials are selected for their permanent utility rather than their initial cost. We are located so as to serve you with the maximum efficiency. Write for information and prices on our complete line.

CHICAGO POTTERY CO.
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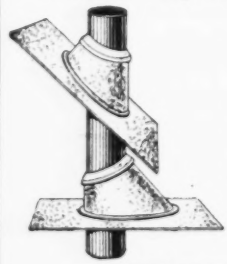
Simplex Adjustable Roof Flashings



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Easily applied—Leak proof—Rustless.

Install Simplex for Service and Satisfaction.

Your jobber has them.

SIMPLEX MFG. COMPANY
313 So. Clinton Street, Chicago, Ill.

A Steam Trap That

Has No Floats, Levers or Bearings

There is nothing to get out of order. Do away with flooded and cold radiators. The quick expanding center tube makes valve action positive. It allows water to pass through but shuts tight when live steam comes along.

NICHOLSON
Expansion Steam Traps

can be installed in any position and insures full value from every pound of steam. Write now for full information regarding this Nicholson Product.

W. H. NICHOLSON & CO.
112 Oregon St. Wilkes Barre, Pa.

E. Vernon Hill, Wm. H. Driscoll, Fred R. Still, J. I. Lyle, B. C. Batcheller.

Dehydration Committee:—Bert C. Davis, B. S. Harrison, H. C. Gore, A. L. Hogan, W. L. Fleisher.

Committee on Furnace Heating:—J. D. Hoffman, chairman. Design—Gravity and Fan: J. D. Hoffman, chairman; B. H. Carpenter, Roy E. Lind, R. W. Menke. Installation: Frank Chew, chairman; J. F. Firestone, L. H. Sanford, W. E. Hopkin, Bert C. Davis. Testing: A. L. Willard, chairman; J. E. Enswiller, F. G. Pryor, J. H. Kitchin, R. W. Noland.

Building Code:—J. E. McHenry, chairman; Conway Kiewitz, E. A. Norris, W. W. Underhill.

Increase of Membership:—Wm. F. McDonald, J. D. Cassell, F. A. De Boos, C. G. Morgan, D. G. Schmidt, Major J. H. Tripp.

Committee on Ventilators:—J. W. H. Myrick, Conway Kiewitz, Theodore Weinshank, S. J. Browne, Capt. H. P. Dempsey.

Committee to Confer with Weather Bureau:—W. G. R. Braemer, chairman; E. T. Murphy, H. P. Gant, W. H. Carrier, T. F. Bahnson.

Appointments to Advisory Committee on Legislation, Committee on Standard Constitution for Chapters and Committee to Revise Constitution will be made later.

Entertainment.

The visiting ladies were not neglected, while the meeting was in progress. The local chapter members provided many enjoyable features of entertainment.

On Tuesday evening the ladies were escorted to the Rivoli Theater, where a good performance was enjoyed.

Wednesday noon they were entertained at luncheon at the Commodore, New York's last word in hotels, which has just been opened. On Wednesday evening the ladies were again the guests of the local ladies' committee at a theater party at the Hippodrome.

On Wednesday morning both the ladies and members were the guests of Crane Co., at its show room on Forty-fourth Street.

James A. Donnelly's famous apples were again distributed and enjoyed by the members and guests.

The annual banquet on Thursday evening eclipsed all its predecessors and was a fitting finale to the notably successful meeting. It was held in the ball room of the Hotel McAlpin, and the party numbered one hundred and sixty. Dancing was a feature of this affair, between courses and following until early morning.

Retiring President F. R. Still was toastmaster. Both he and President-elect Walter S. Timmis spoke of the progress the society had made in successfully reaching the important goal, for which it has been striving for years.

Counselor Staples, of Buffalo, whom the members pleasantly recalled from a former meeting, won the admiration of his audience with his good humor.

Wing T. Wetmore rendered one of Richard Harding Davis's famous monologues in excellent fashion.

IRON AND STEEL FOR FRANCE.

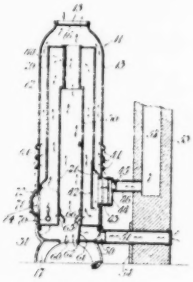
Newly opened channels for the American iron and steel industry are indicated by advices from the French Ministry of Reconstruction, it is stated by the War Trade Board.

The board has received notification that the French Ministry of Reconstruction, Bureau of Raw Materials, will consider favorably applications to import quantities of iron and steel. In obtaining such import licenses it was stated that American firms or their French agencies will be given the same consideration as French firms.

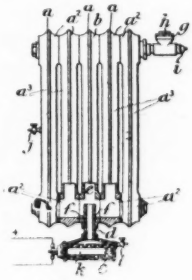
Patents

Heating Department.

1,288,516. Gas Radiator. Elnathan Cole, Los Angeles, Cal., assignor to Cole Manufacturing Co., Los Angeles, Cal., a corporation of California. In a gas radiator, a jacket having a hot air outlet in its extreme upper end; a combustion box inside said jacket; said combustion box having its lower edges tightly secured to the inside of said jacket; and said jacket having air inlets above the point where said box is secured to said jacket; a gas burner in said combustion box; a draft box centrally located in said combustion box and extending upwardly to a point slightly below the top of said combustion box; a series of tubes tightly secured at one end in the top of said combustion box and tightly secured at the other end in the top of said draft box thus providing an open draft between the interior of said draft box and the open space above the combustion box inside the jacket; and flue means for drawing off the products of combustion from said combustion box.



1,288,516.



1,289,052.

1,289,052. Steam Heated Radiator. Charles Reed Allensby, London, England, assignor of one-half to Benham & Sons, Limited, London, England. The combination with a radiator having a series of sections, each including a plurality of horizontal headers connected together by a vertical tube of a boiling chamber arranged beneath the radiator and having means for heating water in the chamber, means to permit water to be introduced into said chamber, manually operated means for sealing the filling means, and a vertical pipe connected to the boiling chamber and extending upwardly through the bottom of the radiator and terminating in close proximity to the lower end of the vertical tube of one of the sections for directing steam upwardly through the vertical tube of that section and for causing said steam to entrain any steam which may descend into the lower headers of the other section, said pipe having an aperture in its wall arranged within the radiator for returning the water of condensation to the boiling chamber.

1,288,631. Expansion Joint. Owen D. McFarland, Chicago, Ill., assignor to Guyton & Cumfer Manufacturing Co., Chicago, Ill., a corporation of Illinois. In a double pipe conduit system, comprising inner and outer concentrically arranged pipes; a single flange having separated openings, one opening in the center for the inner pipe, the other opening radially beyond the center for connection with the space between said pipes; an expansion joint providing two telescopically engaging

DO YOU SELL SUPPLIES AT RETAIL?

If so, put one of the handsome Allen Display Cartons on your counter and tell your customers how ALLEN SODERING STICKS make joints about three times as strong as muriatic acid flux. Non-acid, non-poisonous. Big seller and sure repeater. Send for circular.

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"NATIONAL" PIPE AS A SERVANT

"NATIONAL" Pipe serves reliably in home, office, workshop, field, mine and railroad service—everywhere wrought pipe is required—from coast to coast.

Therefore, "NATIONAL" Pipe may be called A "NATIONAL" SERVANT. This was the title of a page announcement in last week's issue. Time will be profitably spent in reading it again. Turn to it now!

NATIONAL TUBE COMPANY, Pittsburgh, Pa.

Makes No Noise

A Quiet Pump in Your Home

You can keep Pump noise out of your home by keeping out the kind of a Pump that makes a noise.

The Geo. J. Roberts Co.
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Plumbers Specialties

Brass Goods for the Plumbing Trade

Closet Tank and Seat Trimmings, Connected Waste and Overflows, Traps, Supply Pipes, etc.

Any Reliable Jobber can furnish the "Femco" Line from stock

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HOFFMAN VALVES

more heat from less coal

An air venting valve for every service—made entirely of metal; absolutely automatic; absolutely non-adjustable. Guaranteed for five years. Write for catalog.

HOFFMAN SPECIALTY CO., Inc., 512 Fifth Ave., New York City

DESOLVO Clears Clogged Pipes

The **Original** and **Only** pipe cleaner that can be used successfully with **Cold** water.

Used by progressive plumbers everywhere.

Order from your jobber.

The Chamberlain Company
Manufacturing Chemists Pittsburgh, Pa.

K-K Cleans closet bowls "the sanitary way."

Facts about our STANDARD PORTABLE VISE BENCH and PIPE BENDER

Some of the most prominent contractors who have been using our bench for the last five years have recently given us several individual re-orders for over 100 benches.

Don't hesitate to drop us a line and we will send you the names and addresses of hundreds of satisfied users.

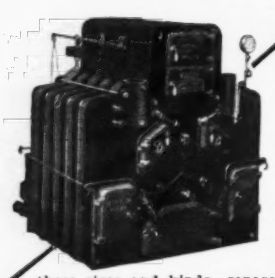
STANDARD IRON WORKS, Inc.
508-10 E. 74th Street, New York City

Champion Auxiliary Heater

Fits any hot air furnace. Increases heating capacity. A business-getter and profit-maker. Try it.

Order from your jobber
or write to

Frank D. Stolz Co.
3127 N. Clark St., Chicago



The Newport

The Magazine Feed Boiler with the Adjustable Throat

The Patriotic Boiler

This year home owners will be forced to take various sizes and kinds of fuel—pea and buckwheat along with chestnut, range and egg. Also non-caking nut soft coal. The Newport is the only boiler which burns efficiently all these sizes and kinds—separately or mixed. Thus your customers are safe, for unusual fuel conditions are overcome. Send for "Newport Heating" document.

Newport Boiler Company
107 South Dearborn Street Chicago

The demand for our Ingot Metal has made H.I.M. grow.

The largest Brass Goods Manufacturers in the middle west are using exclusively our
Red and Yellow Ingot Metal.

Brass Founders using **H. I. M.** Ingot Metal are paying no attention to the high price of Copper and Spelter.

If you neglected to buy H. I. M. write for particulars.

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Pop-Up
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CONCEALED
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Manufactured by
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630 N. FRANKLIN ST. CHICAGO, ILL.

Tank Fittings of Quality

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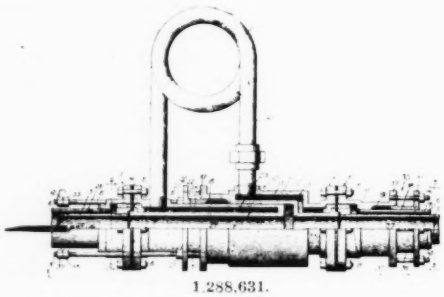
The ORIGINAL Compound Lever Ball Cock, Elevated, Low-Down, Top and Bottom Supply. Tank Levers and Valves.

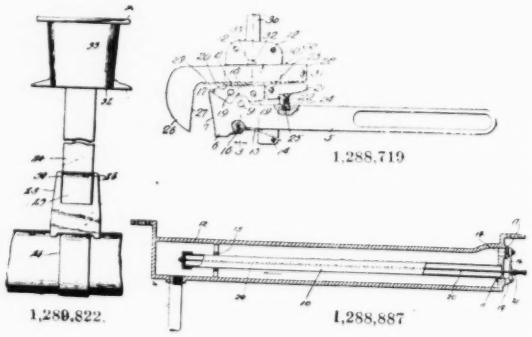
McSHANE BELL FOUNDRY CO.
BALTIMORE, MARYLAND

double-wall sections larger in diameter than the connected conduits, each section provided with a flange, of the character described; a flexible means for connecting the spaces between said double walls of said expansion joint together, in combination with double pipe conduit sections having similar flanges for connection to the flanges of said joints.



1,288,631.

1,289,822. Pipe Hanger. William Langdon, Toledo, Ohio. A pipe hanger embodying an elongated flexible member, a hollow conical element threaded upon said member in a manner to form a loop, a shoulder formed on said conical element whereby one end of the flexible member may be bent over to provide engaging means and a pocket also formed in the conical element for receiving the extremity of the flexible member to hold said extremity in engagement with said element and means engageable with the opposite end of the flexible member for securing the latter to a support.



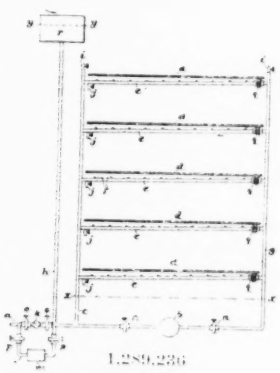
1,289,822. 1,288,719. 1,288,887

1,288,719. Pipe Wrench. Eugene P. Smith, Shelby, Ohio. In a device of the class described, the combination of a fixed jaw having a handle extending therefrom, a housing connected to said jaw and handle, a rack block carried by said housing, a slide block pivotally mounted upon said housing, said handle having a socket in alinement with said slide block, a coiled spring carried within said socket and extending into engagement with said slide block for normally urging the slide block in one direction, a movable jaw having a shank extending through said housing, a cam carried by said housing, means for shifting said cam, thus causing said handle to be held in engagement with said rack block, thus holding the jaw in an adjusted position, and said cam being adapted to move, whereupon said slide block will swing to shift said shank from engagement with the rack block, thus permitting the movable jaw to be easily shifted.

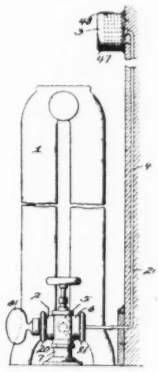
1,288,887. Vapor-Vacuum-Controller Valve. Harry Hall Hess, Philadelphia, Pa., assignor to Vapor-Vacuum Heating Co., Philadelphia, Pa., a corporation of New Jersey. In a device of the character stated, an expansion tube located in the direct path of travel of heated vapor, a casing supporting and surrounding said tube said casing

being provided with an opening for the passage of air and an outlet connected to a vacuum system for draining water of condensation away from said opening, a flap valve located beyond said expansion tube and pivoted for free vibratory movement toward and away from said opening, and means controlled by the movement of said tube for closing said valve whereby the built-up vacuum maintains said valve closed under predetermined conditions.

1,289,236. Combined Heating and Sprinkling System. Charles P. Nutter, Malden, and John E Chatman, Swampscott, Mass. The method of filling air chambers provided in a combined sprinkler and heating system for insulating the sprinkler heads from the heat of the circulating water, which consists in filling said chambers with air under substantially the pressures normal to said chambers under operating conditions and trapping it in said chambers while under such pressure by admitting water to the system.



1,289,236



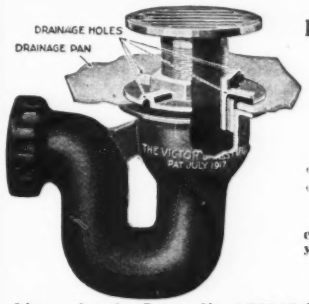
1,289,963.

1,289,963. Automatic Temperature Regulator. Thomas N. Thomson, Scranton, Pa. An automatic temperature regulator comprising a balanced heat controlling valve, a pair of opposed flexible diaphragms both subject to the same valve pressure and to which diaphragms the members of said valve are connected, one of said flexible diaphragms forming a fluid-tight flexible chamber, a thermostat embodying a hermetically sealed flexible chamber located at a distant point relatively to the valve and containing a liquid of low volatility, a fluid-tight flexible chamber in contact with said thermostat whereby expansion of the thermostat will compress said fluid-tight chamber, a tube connecting the latter flexible chamber to the flexible chamber associated with the valve, said flexible chambers and said tube being hermetically sealed and containing a fluid through the medium of which force is transmitted from the thermostat to the heat controlling valve to operate the latter.

Plumbing Department.

1,288,542. Sanitary Drinking Fountain. John P. Farley, Kansas City, Mo. A sanitary drinking fountain, comprising a pipe having a laterally projecting drain pipe and a laterally projecting trough supply pipe, the latter at a higher point than the former, a trough communicating with the trough supply pipe and arranged with its upper edge above said pipe, a catch basin communicating with the upper and a casing communicating with the lower end of the first-named pipe, the casing having a water supply opening and a drain opening at different heights, an endwise movable stand pipe within the first-named pipe, a piston valve movable with said stand pipe and provided with a passage communicating with the stand pipe and with an opening for the ingress and egress of water to

VICTOR



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Shower Traps and Drains
Feature No. 7

Safe pan may be greatly enlarged, giving perfect drainage over a wide area.

If your Jobber does not carry Victor Traps, mail your order to us.

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Eagle All Lead Roof Flange

LEAD PIPE
Length, 6 inches
Diameter, 4½ inches
Made in Angles, 45 deg., 22½ deg. and Straight.

SIZE OF APRON
15 inches Square

No Caulking To Be Done
Joints Lead-burned — No Solder Used
Flexible Adjustable Economical

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MILWAUKEE

AMERICAN
Handy Supplies

Made of 3/8 in. I. P. S. tube to wall with 7/16 in. O. D. annealed upright tube, to slip inside of basin cock shank.
Furnished with brass friction ring and rubber cone shaped washer, as shown.
A neat fixture. A big time saver.

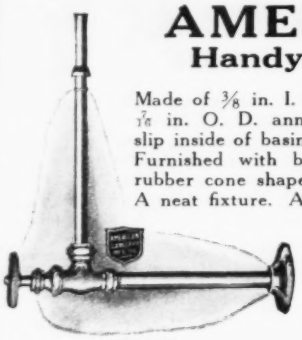
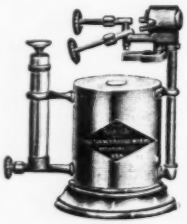


Fig. 88

Manufactured by
AMERICAN SANITARY MFG. CO.
Abingdon, Illinois

It's All in the Burner



No. 92

Perfect combustion, not only means the consuming of every particle of gasoline, but produces a higher degree of heat, greater efficiency and economy. This accounts for the unusual success of the

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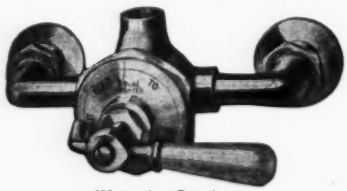

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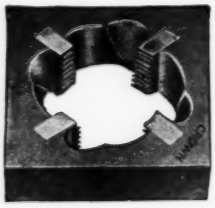
"CROWN DIES" are "SCIENTIFICALLY MANUFACTURED." The teeth are "MILLED" not merely tapped as the ordinary Die. This is why "CROWN DIES" are the "EASIEST CUTTING" Dies on the market. They are the "BEST" Dies made and in the long run the "BEST" are the "CHEAPEST." Therefore, when ordering dies specify and insist on "CROWN DIES."



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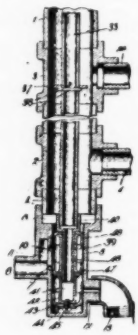
Crown Die & Tool Co., 555 W. Monroe St., Chicago

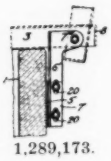
Mfrs. of "Crown" Pipe Cutters, Chain Post Pipe Vises. Stocks, Etc.

and from said passage and stand pipe, said valve normally closing the said water supply opening of said casing and uncovering the drain opening thereof, means closing communication between the first-named pipe and said casing at a point above the water supply pipe opening of the latter, a mouth piece for the stand pipe from which water shall overflow into said catch basin, means to move the stand pipe until said valve uncovers the water supply opening and covers the drain opening of said casing and means for deflecting water flowing down through the first-named pipe around the stand pipe, through said trough supply pipe until the trough is fully charged.

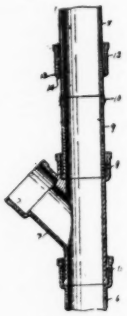


1,288,542.

1,288,971



1,289,173.



1,288,613.

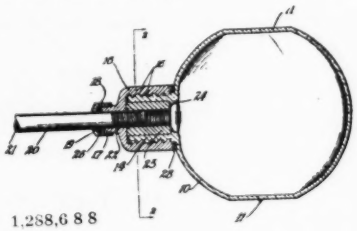
1,288,971. Apparatus for and Method of Making Washers. James W. Ohlman, Massillon, Ohio, assignor to the Reliance Manufacturing Co., Massillon, Ohio, a corporation of Ohio. A method which comprises forming stock into a helix, cutting through the helix to produce a split washer, and deflecting a portion of the helix at the cut during the latter operation to secure a biting tooth in the washer.

1,289,173. Laundry-Tray. Emil E. Hoffman, New York, N. Y. A device of the class described comprising in combination a supporting bar having a rearward extension at each end thereof, hinge columns in the form of vertically extending angle members, means for adjustably securing said angle members to the extension so that the angle members can be moved vertically relative to the supporting bar and held in adjusted position, a cover and means for pivotally connecting the cover to the hinge columns.

1,288,613. Insertible Joint. George W. Kafer, Trenton, N. J. In combination with the main pipe sections, a T-coupling insertible between said pipe sections with one branch disposed in alinement therewith, a pipe section extending between one end of the T-coupling and one of the main pipe sections and having the end thereof opposed to the end of said latter pipe section diametrically enlarged and externally threaded, a coupling hub loosely engaged upon said main pipe section and formed with an inwardly projecting threaded flange on one of its ends for connection to the threaded end of said insertible pipe section, said coupling hub being of appreciably greater diameter than the main pipe section, and means adapted to be arranged in the space between the main pipe section and said hub and engaged directly upon the threaded connection between the hub and the interposed pipe section to effect a water-tight joint therebetween.

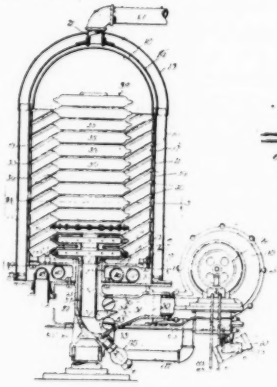
1,288,688. Valve Float. Justins Salucka, Jamaica, N. Y. In a valve float, the combination with a hollow glass float having flat sides, and a tubular support rod therefor, of an extension formed with said float, coarse screw-threads formed on the outer surface of said extension, a socket engageable therewith, said socket having a stem through

which said rod passes, means for packing the joint between said stem and said rod, an elongated square nut suited to a corresponding recess formed in said extension, said tubular rod being engageable within said nut and an elastic washer between the adjacent end of said socket and the surface of said sphere.

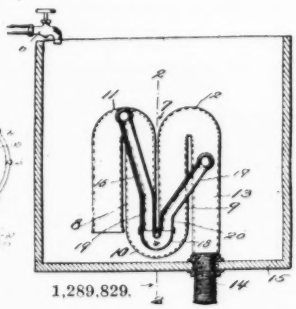


1,288,688

1,289,576. Water Heater. Justin Kay Toles, San Francisco, Cal. A water heater comprising in combination a base, a burner thereabove, an imperforate shell secured to said base and forming a combustion chamber, completely inclosing said burner, there being a restricted escape vent leading out from said combustion chamber, a second shell surrounding said first mentioned shell throughout in close proximity thereto, the thin space between said shells being divided into a plurality of spirally arranged water passageways, there being a water inlet space opening to the lower ends of said spiral water passageways, and an outlet water space opening to the upper ends of said spiral water passageways, an outer shell spaced away from said second named shell and paralleling the same throughout, and inlet and discharge pipes opening to said water inlet and outlet spaces.



1,289,576.



1,289,829.

1,289,829. Automatic Flushing Apparatus for Waterclosets and Urinals. Jacob F. Leanhart, Louisville, Ky. A tank with water supply means, a main double S-trap siphon therein having an outlet through the tank, and an auxiliary siphon attachment applied along one side and wholly exterior of the said main double S-trap siphon and having divergent leg members of different lengths and an elbow respectively connected to the legs and lower elbow of the main double S-trap siphon, the connection between the elbow of the attachment and the lower elbow of the double S-trap siphon causing the formation of a water seal in the lower elbow of the attachment to prevent the passage of air from the inner to the outer leg of the double S-trap siphon at the termination of the operation of the latter.

Emile Puharich has sold his plumbing business in Sausalito, Cal., to G. H. McKissick.

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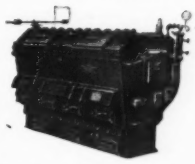

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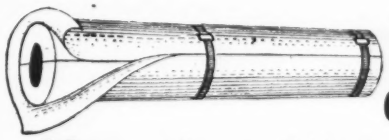

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Fig. C25

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Made by

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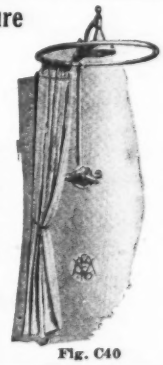

Fig. C40

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